

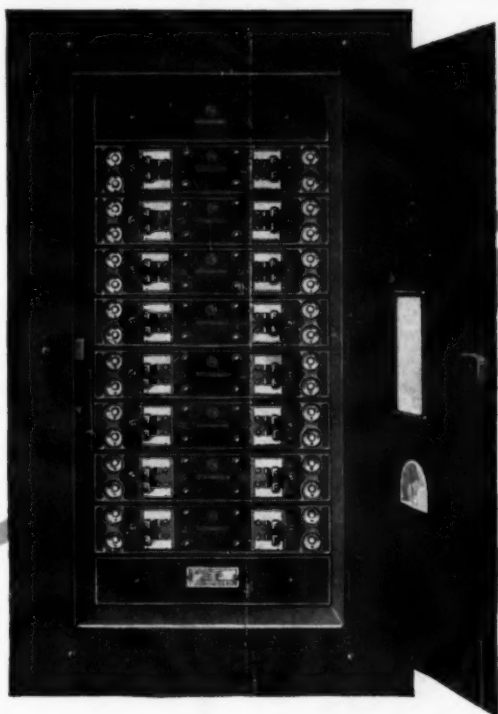
# The Electragist

TRADE MARK REG. U.S. PAT. OFFICE

Vol. 26, No. 8

Association of Electragists  
INTERNATIONAL

JUNE, 1927



## Install

### **FA** Panelboards

Successful Electrical Contractors know that **FA** Panelboards help them make money by saving time in installation, getting prompt architect and owner acceptance and by building a real reputation for better work.

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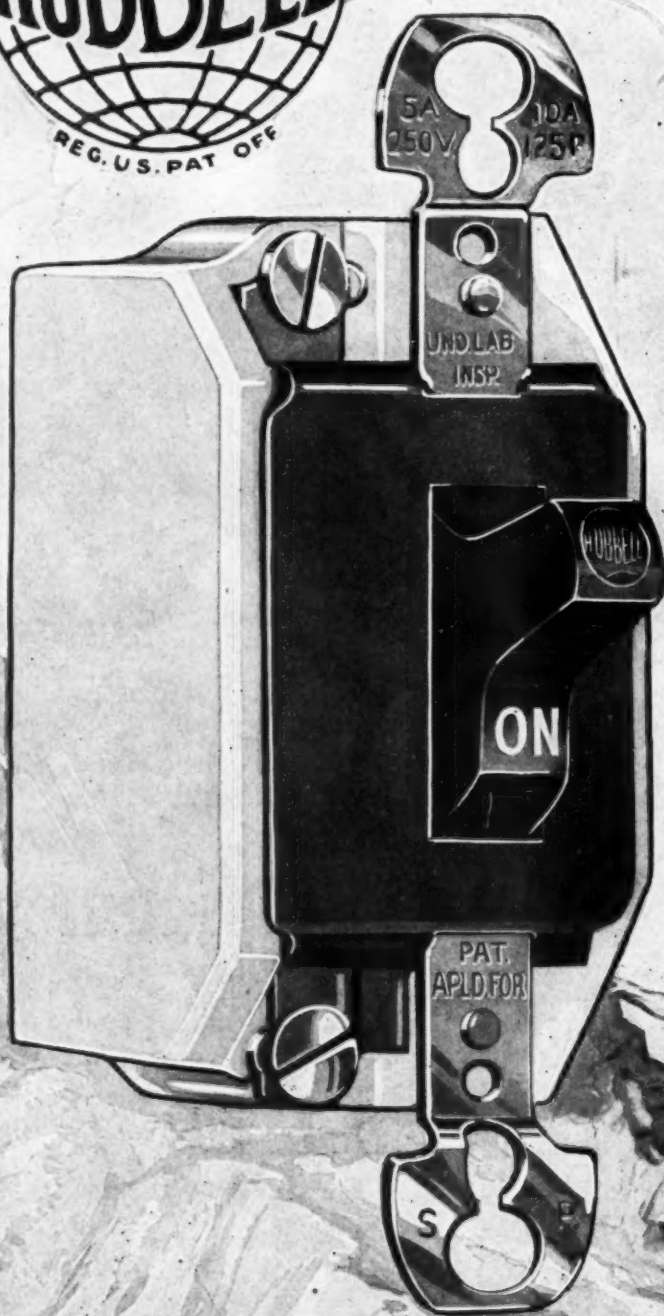
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Examine a Hubbell "Tip-Top" Switch. See how strong and well-made it is. Test the mechanism—you will find its action exceptionally smooth and positive.

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No. 8803 3-W., List Price, 0.50  
No. 8804 4-W., List Price, 1.00 ]

**A FINE SWITCH AT A POPULAR PRICE !**



# The Electragist

(The National Electrical Contractor and The Electrical Contractor-Dealer)

Official Journal of the  
Association of Electragists—International

Vol. 26

JUNE, 1927

No. 8

## Wiring Conference Urges Sales Effort by Industry

LACK of sales effort, not the cost of wiring, is what is holding back the progress of adequate house wiring, according to the report of the chairman of the Industry Conference on wiring presented at a meeting of the conference held in New York on April 27. The report was unanimously adopted by the representatives\* of the National Electric Light Association, the Electrical Supply Jobbers' Association, the National Electrical Manufacturers' Association and the Association of Electragists, International.

The Industry Conference on Wiring came about as the result of a protest by the National Electric Light Association that the cost of wiring, and par-

ticularly all-metal wiring, was retarding the development of house wiring. The Association of Electragists accepted the challenge and the two sides invited Earl Whitehorne, commercial editor of *Electrical World*, as a neutral, to become chairman of a conference, to which representatives of the jobbers' and manufacturers' national associations were to be invited, to discuss the whole subject of the economics of wiring with respect to its effect upon the greater use of electricity in the home.

The first meeting was held in New York, October 15, 1926, at which time the subject was outlined and the Association of Electragists presented a brief covering every phase of the subject.

At a later meeting of the executive committee the National Electric Light Association submitted a brief as an answer to that submitted by the Electragists.

With these two briefs before him, the chairman was instructed to prepare a summarized report and if necessary to secure further data and evidence wherever he might care to search for it. As stated in the report, he secured statements from the technical advisors to the several groups and from neutrals in the field. He also sent a questionnaire to every electrical league and based on the combined evidence submitted the report which has been unanimously adopted.

### CHAIRMAN.

Earl Whitehorne, commercial editor of the *Electrical World*, New York.

### REPRESENTING THE NATIONAL ELECTRIC LIGHT ASSOCIATION:

W. H. Blood, Jr., Stone and Webster, Boston, past president N. E. L. A.; member electrical committee, N. F. P. A.; insurance expert for N. E. L. A.

A. P. Good, chief inspector, Commonwealth Edison Company, Chicago, chairman wiring committee, N. E. L. A.

J. D. Noyes, engineer, Detroit Edison Company, Detroit, member wiring committee, N. E. L. A.

Charles J. Russell, vice-president, Philadelphia Electric Company, Philadelphia, past chairman commercial section, N. E. L. A.

### REPRESENTING ELECTRICAL SUPPLY JOBBERS' ASSOCIATION:

G. A. Oullinan, vice-president, Graybar Electric Company, New York; member executive committee and chairman co-operative relations committee, E. S. J. A.

W. I. Bickford, secretary and

treasurer, Iron City Electric Company, Pittsburgh; chairman Atlantic Division; chairman wire conductors' committee and member executive committee, E. S. J. A.

W. R. Herstein, president, Wesco Supply Company, Memphis; chairman dealer co-operation committee, E. S. J. A.

O. F. Rost, president, Newark Electrical Supply Company, Newark; member dealer co-operation committee and member co-operative relations committee, E. S. J. A.

### REPRESENTING THE NATIONAL ELECTRICAL MANUFACTURERS' ASSOCIATION:

H. R. Sargent, engineer, General Electric Company, merchandise department, Bridgeport; member electrical committee N. F. P. A.; member of wiring service section, N. E. M. A.

C. A. Bates, chief engineer, The Bryant Electric Company, Bridgeport; member electrical committee, N. F. P. A.; member board of governors and chairman standards committee, N. E. M. A.

R. C. Myer, Habirshaw Cable Co.,

New York; member of wire and cable section, N. E. M. A.

W. E. Sprackling, vice-president, Tubular Woven Fabric Company, Pawtucket, chairman non-metallic section, N. E. M. A.

### REPRESENTING ASSOCIATION OF ELECTRAGISTS—INTERNATIONAL:

J. A. Fowler, president, Fowler Electric Company, Memphis, past president, A. E. I.

A. P. Denton, president, Denton Engineering and Construction Company, Kansas City; chairman, article five committee of N. F. P. A. electrical committee; chairman code committee, A. E. I.

W. C. Peet, president, Peet & Powers, Inc., New York; past president, and chairman trade policy committee, A. E. I.

G. E. Shepherd, president, Shepherd-Rust Electric Company, Wilkes-Barre; chairman wiring methods committee, A. E. I.

### TECHNICAL ADVISERS:

Laurence W. Davis, general manager, A. E. I.; technical adviser to Association of Electragists delegation.

Joseph C. Forsythe, New York Board of Fire Underwriters, New York; technical adviser to the conference on inspection.

H. B. Kirkland, Society for Electrical Development; technical adviser to National Electrical Manufacturers' Association delegation on ordinance conditions.

Alexander Maxwell, engineer, N. E. L. A.; technical adviser to National Electric Light Association delegation.

### OBSERVERS FOR THE INDUSTRY:

E. C. Bennett, Editor, *Electric Light & Power*.

O. H. Caldwell, Editor, *Electrical Merchandising*.

S. A. Dennis, Editor, *Electrical Record*.

Howard Ehrlich, Editor, *Jobbers' Salesman*.

Charles T. Hutchinson, Editor, *Electrical West*; chairman California Electrical Bureau.

S. B. Williams, Editor, *The Electragist*.

### SECRETARY AND TREASURER:

Eustice C. Soares, *Electrical World*.

Before presenting the conclusions and recommendations, it is interesting to note the following summary of the answers of the 32 leagues which replied:

- (1) Unanimous opinion that need is for educational selling—national and local.
- (2) Is wiring being retarded by
  - (a) Cost of Wiring? 28 No—4 Yes
  - (b) Cost of Current? 30 No—2 Yes
- (3) Only two cities were "all-metal," one being "all-rigid," the remaining using metal in varying proportions.
- (4) Does all-metal restrict the market? 23 No, 5 Yes, and 4 no answer.
- (5) Under remarks—"Two cities report that knob and tube work and armored cable were virtually the same cost."

The report found that there were but two ways to speed up housewiring:

- (1) By reducing the cost of wiring.
- (2) By doing a better selling job.

Then the report goes on to take up the two points. On the side of wiring costs, the report says:

"The only laws that can be invoked to reduce the cost of wiring are the laws of economics. Here are the ways in which the cost of house wiring in America can be reduced by the electrical industry:

- "1. By uniformity of inspection requirements throughout the country.
- "2. By the elimination of excess and duplicating varieties of materials and equipment made possible by uniform inspection requirements.
- "3. By a more effective standardization of manufactured products that will increase mass production.
- "4. By the development of industry statistics in the manufacturing and jobbing fields, to stop the wastes of over and under-production that today add cost to every wiring job.
- "5. By the development of economics in our system of distributing manufactured products in the electrical industry.
- "6. By the possible development of entirely new wiring materials and methods that will contribute new economies either in material or labor costs or both.
- "7. By the education of the contractor to do a better job in planning the layout of installations and in supervising his men.
- "8. By the better training of workmen so that wiring can be installed more effectively and more economically.
- "9. By the development of more effective tools for use in installing materials in order to save labor.
- "10. By the standardization of central-station service requirements so that construction outside the meter may also be as inexpensive as possible.
- "11. By the improvement of the business practices of contractors and dealers so that the present high cost of ignorance, incompetence and failure will not also be burdened on every wiring job."

The most immediate and profitable opportunity for the industry according to the report lies in a wholly different direction—selling, and in this connection two paragraphs are quoted:

"It is an indisputable fact that the electrical industry since its very beginning has never exerted any united effort to create a market for better and more adequate house wiring. For more than forty years the industry has grown by a process of accumulat-

ing customers. Year after year the power companies have endeavored to connect up the greatest possible number of residence customers, until much of the country has virtually no unwired houses within reach of power lines. But up until very recent years no thoughtful effort has been given to making these residence installations more than gaunt skeletons of house wiring.

"The contracting industry, like the power industry, has ridden on the wave of the popular desire for electric service, until at last the time has come when there are few more unwired homes to go after and both the central stations and the contractors have been brought face to face with the reality that if their business growth and volume is to continue as it has in the past they must go to work and sell. It is a melancholy picture that when this realization began to bear in upon them instead of going to each other to join hands in a creative movement to develop the almost limitless opportunity that lies immediately before them they fell to squabbling over the cost of wiring, which to my knowledge the public has never bothered its head about, since it today amounts to but one or two or three or four percent of the cost of the house, often including fixtures."

With respect to all-metal, which was the first thing that had to be cleared up before anything else, the report points out that the power people had misunderstood the Electragist's position, but that in view of harmony it was recommended that the A. E. I. leave off the words "all" and "standard" when referring to metal protected wiring, and that it make a further effort by means of a further statement to clear away any misunderstanding that exists.

It was definitely pointed out, however, that where metal protected wiring was the rule, that it had in no way acted to retard the development in wiring.

The recommendations which concluded the report follow:

- "1. That the Association of Electragists should restate its position regarding metal wiring, outlining its policy and intent in such terms that it will be simple to understand and incontrovertible in its basic principles and I urge that hereafter the use of the term "all-metal" and the word "standard" be avoided. This statement should be disseminated broadly throughout all the branches of the electrical industry including the electrical contractors who are not members of the Association of Electragists.

[This statement appeared in the May issue of THE ELECTRAGIST on page 28.—The Editor.]

- "2. That the National Electric Light Association should inform its members and the power industry in general of the actual scope of this wiring program of the Association of Electragists, mak-

ing clear the policy and intent of the Association of Electragists in promoting it, in the hope that the misunderstanding within the power industry may be cleared away.

- "3. That the Association of Electragists should send a frank and earnest warning to its membership that their enthusiasm for metal wiring be not in any case permitted to carry promotion to the fringe of coercion by over-zealous activity in behalf of local ordinances that exclude other types of wiring installation.

"This accomplished, we can turn our thoughts ahead to the more appealing purpose of organizing and carrying forward our waiting job of rewiring or completing the inadequate installations now blocking progress in nearly 16,000,000 homes scattered throughout every community in America which are a continual reproach to the entire electrical industry.

"To this end I offer you the following further recommendations:

- "4. That if this report be acceptable to the conference, it be conveyed to the four participating associations with all the supporting evidence—the stenotype reports and minutes of our two meetings and the minutes of the two meetings of your executive committee, the briefs and the copies of all league reports—that our findings and recommendations be reported to the membership of these four associations at the coming summer conventions, and that the report be released to the electrical press June 1, and as soon as possible thereafter that it be distributed generally to the electrical industry in pamphlet form.

- "5. That the present delegations of the four national associations of the electrical industry invite these organizations which they represent to appoint new delegations, selecting for each association five outstanding men who they believe will best represent the sales experience and the spirit and resourcefulness of these several associations, to meet with me in July on a date to be set, to reorganize under a new chairman for the purpose of formulating a program for the promotion of the domestic market for house wiring, electric service and electrical equipment in the homes of America.

- "6. That thereupon the present delegations from these associations should

(Continued on Page 36)



# Boston Edison's Cooperative Merchandising Campaign

**Illuminating Company Is Carrying on Wiring and Appliance Selling Activities That Have Many Attractive Features for the Contractor-Dealer**

**T**O promote greater activity in the sale and use of electrical appliances, to aid in better buying, to cooperate in selling and financing, to bring about closer acquaintanceship and understanding," The Edison Electric Illuminating Company of Boston has created a plan of cooperative merchandising with the electrical contractors and contractor-dealers in the towns that make up its territory which is producing excellent results.

The plan is being worked out in conjunction with the Dealers' Service branch of the company's Relations with Allied Interests Department, which was described in a recent issue of THE ELECTRICIAN. This department is in charge of J. J. Caddigan. This plan includes a window-trimming service that is given free to contractor-dealers and which has been found to be a splendid aid in merchandising appliances.

As a basis for the campaign, the illuminating company is creating a consumer demand for appliances by using large advertising space in the Boston newspapers and those of the other towns in its territory. Each of these advertisements contains as a part of the copy a definite tie-in of the electrical dealer as a merchandiser of the articles being featured. They may be purchased, the copy reads, "at any of the stores of the Boston company or at the shop of the local electrical dealer."

## Standard Appliances Only

The general merchandising policy which the company has set down for this cooperative activity provides for the purchase of appliances from its shops or those of the dealers in the territory. The dealer is offered two methods through which he may supply his customer's needs on advertised appliances which he may not have in stock for one reason or other. If such an appliance is called for he may buy it direct from the Edison company, after completing a sale, at a price which will

enable him to obtain a good profit. The second method enables him to turn over to the company a legitimate "lead" and obtain the commission if the sale is made. The company states that it is offering these two plans because it realizes that it is not always to the dealer's advantage to handle all appliances that have a guarantee of durability from the manufacturer, which the

company insists upon, and that he needs aid in the demonstrating, servicing and financing of such appliances.

## Maintaining Prices

It is the company's policy to sell at list price all articles where "list" is the selling price as understood by the manufacturer. The only exceptions are "specials" or where there are "over-

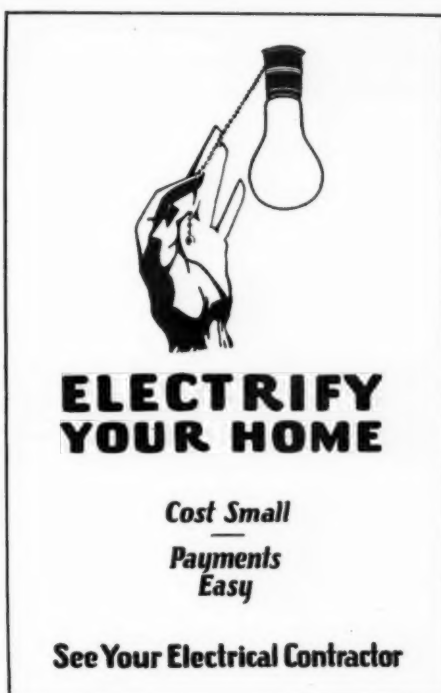


**ELECTRIFY YOUR HOME**

**COST SMALL  
PAYMENTS EASY**

**SEE YOUR ELECTRICAL CONTRACTOR**

Samples of wiring advertising used in Somerville. Above is card carried in the street cars of that city



**ELECTRIFY  
YOUR HOME**

**Cost Small  
Payments  
Easy**

**See Your Electrical Contractor**

stocks," and these are sold at prices commensurate with sound merchandising practice. Dealers cooperating under the plan are expected to follow a similar policy.

Any dealer who has a fixed store location and who is in good standing in his community may purchase direct from the company any appliance that it sells provided he is filling an order which he has received from a customer of the lighting company. He may buy singly, or in quantity.

The company says that it is not its purpose to do a jobbing business and expects that articles purchased from the company on this plan will be confined to appliances having no standard "list," or to appliances that the dealer may wish to buy in less than standard pack-

age quantities. On the articles having no standard "list," the company offers the dealer the benefit of its larger purchasing power so that the dealer may be able to offer to his customers the same article that the company is promoting at the same price.

A special finance plan has been prepared to enable a dealer to finance a sale from his own stock on appliances sold by the company's appliance department which retail for more than

commissions on other appliances are announced to the cooperating contractor-dealers at the time the sale starts.

#### Selling Extra Outlets

One of the group of advertisements shown here, it will be noted, is designed to sell extra convenience outlets in the home. The electrical contractor is tied-in in this copy, too, and when inquiries for convenience outlets are received at the office of the company, the sales people

House wiring is being stimulated in much the same way as is the appliance business, but thus far only one of the cities in the territory is receiving attention. Others will be added after the work has been completed there.

Somerville is the scene of the activity at the present time. It was found that 40 percent of the homes there are of the modest type and are unwired. They are owned by men whose incomes range from \$2,000 to \$5,000 per year. The local newspaper is carrying the Edison company's "Electrify Your Home" advertisements, one of which is shown in connection with this article. On all of these advertisements the words "See Your Electrical Contractor" are prominently carried. The lighting company is also using advertising cards in the 110 street cars in that city with similar wording on it, and has erected a large painted board in the city's main street as a part of the program. A noteworthy feature of the advertising campaign on wiring is the omission of the lighting company's name from all the copy that is used. This directs the attention to the electrical contractor alone and eliminates any possible idea arising in the mind of a reader that the utility does wiring and that it is seeking business for itself.



On all of the Edison company's appliance advertising in the newspapers attention is called to the local electrical dealer as a retail outlet for the goods

\$30, such as refrigerators. A charge of two percent is made for this service.

#### The Commission Plan

The commission plan gives the dealer a method in which the company aids him in demonstrating, selling and financing appliances selling for more than \$30, and pays a commission on all "leads" that result in sales within 30 days. The dealer sends in the name of his prospect, and the company will demonstrate the appliance sold, ship it to the customer and finance the sale, paying him a commission for sending in the successful "lead."

A definite schedule of commissions has been worked out as follows: On washing machines, 15 percent off list; three makes of vacuum cleaners, 10 percent off list, one make, ten percent of selling price; refrigerators, three makes, 10 percent off list, f. o. b. factory; five makes of electric ranges, 5 percent off the Edison company's sales price; sewing machines, 10 percent off the Edison company's sales price. The

are instructed to take the inquirer, if he comes in person, to the information desk in the sales department to get such information as the customer may need. An effort is then made to create a contact between the prospect and a contractor in his neighborhood. The agents of the company then follow up the contacts so created.

Further contacts are made with the contractors in the territory by representatives of the Relation with Allied Interests Department on the subject of appliance sales. The company has divided its territory into four sections. In each of these there is a representative of that department's contractor service division, who calls at intervals on all the recognized contractor-dealers in the company's territory. These men give the dealers advance proofs of the utility's advertising campaigns, taking up the salient features with the dealer, explaining what the terms for that particular activity will be, answering questions and urging them to go out after appliance business on their own account.

#### Intensive Contact Maintained

Contact with the contractors in Somerville is maintained in the same manner as is the case with all the contractors in the company's territory, except that it is more intensive there because of the wiring activity. Regular calls are made on these men, the company's plans are explained in detail, suggestions are sought that will make possible closer cooperation by the lighting company.

The company states that in carrying out this cooperative appliance selling plan it is getting down to the fundamentals of real, cooperative merchandising service and building a good will among dealers who appreciate that good will all the more because it affects the dollars and cents side of their business. It also says that in considering the best interests of other concerns that are selling electrical appliances and helping to increase their sales of approved devices, it is establishing a friendly basis in business which must be mutually helpful. It has practically stopped competing for appliance business and has become a stimulator to the trade.



# Window Lighting Campaign in Baltimore

## Local Electragists Have a Carefully Prepared Plan to Sell Merchants on Adequate and Efficient Illumination

UP TO the present time, at least, building construction in Baltimore this year is not keeping up to the 1926 record. There is also a perceptible falling off of activity in the smaller industrial plants and in the remodeling of old buildings. The natural consequence is a smaller volume of business for the electrical contractor.

But the Baltimore electragists do not have to sit with folded hands bemoaning their fate under these conditions; they are organized. The Maryland Division, Association of Electragists, International, is set up to cope with just such problems as this, and is giving a splendid example of what initiative, resourcefulness and hard work can accomplish through the united effort of an entire industry.

Faced with the falling off of business secured through the usual channels, a capable business executive at once turns his attention to the creation of new business to fill up his quota. This is exactly what the electrical industry in Baltimore has done.

The first concrete activity of the Maryland Division, A. E. I., in this direction is a campaign to sell show window lighting. If thorough and systematic preparation is any guarantee of the success of an undertaking this one is bound to succeed.

### How Work Was Done

A committee was appointed to take entire charge of this work, consisting of one electragist, one jobber, one manufacturer's agent, and one representative of the central station company. The obvious choice fell upon a contractor who was experienced and particularly interested in this class of work, a jobber's salesman who was familiar with window lighting equipment and its use, the local representative of one of the principal manufacturers of this equipment, and the window lighting expert of the central station company.

The committee's first work was the preparation of a nineteen-page booklet of window lighting specifications. The character of the material included is indicated by the pages shown here.

The first page is devoted to sales points. The procedure to be followed in laying out a window installation is

be fitted up for demonstration purposes with the most approved types of window lighting installations. Four of these demonstration windows are on important main streets in the downtown business district, two are on side streets in the downtown section, and two are on streets in outlying business districts.

The image shows two pages of a survey form. The front page (left) is titled "SHOW WINDOW LIGHTING SURVEY" and includes fields for Name, Address, Business, and a table for recording lighting data. The back page (right) is titled "PROPOSED INSTALLATION" and includes fields for District, Background, Effect, Kind of Valance, Material, Present Equipment, and Proposed Installation details.

Front and back pages of the Baltimore survey form

next covered in detail, with complete data in the form of tables, graphs and sketches of typical layouts with explanatory notes. Following these pages there are six charts showing the types of reflectors of various makes suitable for use under given conditions. The remaining pages cover backgrounds, valences, fading of colored materials, temperature in the window, footlighting, spot lighting, special effects, types of construction, and methods of control.

Altogether this booklet forms a complete and very valuable handbook on the subject and reflects great credit on the committee which produced it.

Eight windows have been selected to

Considerable newspaper publicity will be given to these windows, and a count will be made at each one of the number of passersby stopping to look at the merchandise on display before and after the new lighting is installed.

The complete installation in each window may be purchased by the store after the demonstration is concluded at a specified price, or in the remote possibility that the equipment is not wanted by the store proprietor the equipment will be taken back by the jobber and the contractor who did the work will be compensated for his services by the association.

A special form has been prepared

for use in making a survey of the premises of a prospect. This is a double letter-size sheet, folded. One side is reproduced in connection with this ar-

demonstrated. Any member may by appointment bring a window-lighting prospect to the lighting company's building where he will be given a full

his own selection of firms to be asked for bids. If he asks for definite recommendations he will be given two or three names chosen by lot.

One point that is absolutely essential to the success of any campaign of this nature is to insure that the contractor will receive a fair price for the installations he makes. The committee has accordingly compiled labor cost data applying to every type of installation and has provided the contractor with a price list which may be conveniently used to compute the selling price of an installation consisting of any standard type of equipment and any standard type of construction. This being the first large scale selling effort undertaken by the Baltimore association, a form of activity was wisely chosen which appeals to civic pride and in which it is easy to secure the hearty cooperation of local trade associations. A campaign for better window lighting is 100 percent acceptable to an association of merchants organized for the purpose of improving conditions on some one particular street. Manager Peterson has already addressed the local hardware dealers' association on the subject of the campaign and has met with a most encouraging response. He has been invited to talk to the local organization of retail grocers which are boosting better lighting as an aid to their members in competing with the chain stores.

#### FIRST:

##### PROCEEDINGS IN LAYOUT FOR SHOW WINDOW LIGHTING

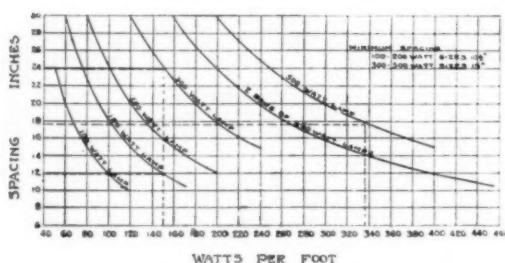
- A Draw an accurate floor plan of the window to scale showing which sides are glass and which solid. (The preferred scale is 1/2 inch to 1 foot.)
- B Show on this plan all floor dimensions
- C Show also other dimensions as follows:
  - 1 Height from floor to ceiling of window
  - 2 Height from floor to lights, if lights are not to be on ceiling.
  - 3 Height from window ceiling to bottom of valance. State whether the valance is a painted sign or opaque.
  - 4 Height of headroom over window, if window ceiling is not the same as store ceiling.
  - 5 If background is not entirely solid and opaque, give height of top of solid portion above floor of window and also above floor of store. If the height varies draw a diagram and give dimensions.
  - 6 Height from window floor to highest point of trim.
- D Give the following information:
  - 1 District (city, side, or suburban street. When in doubt between two classifications use the one giving higher voltage.)
  - 2 Color of background and color of display (light, medium, or dark.) Ascertain if dark backgrounds and displays are ever used and if so design lighting for them.
  - 3 Material of ceiling, transom bar or other part of window to which lights are to be attached.
  - 4 Effect desired.
    - a Good lighting with clear lamps for night use principally "daylight" lamps
    - b Same but with color screens
    - c Same but with color screens
    - d To relieve daylight reflections in glass.
  - 5 Describe briefly the present lighting as to amount, kind, and location so that the improvement can be estimated and recorded.

#### THIRD:

Refer to Chart 1 on this page. Find the point on the horizontal scale corresponding to the figure just obtained from Table 1. Draw a line vertically from this point. It will cross one or more curves labeled for various lamp sizes. From the point of intersection with the curve for the size of lamp desired follow a line horizontally to the left-hand, vertical scale and read the correct spacing.

Divide the window length by this spacing to get the number of units. If the division is not exact, take the nearest whole number. When possible, design for an odd number of units as it is easier to divide the circuits to make the lighting symmetrical when only a part of the installation is used.

Example: Continuing our former example where we obtained a figure of 358 watts per foot, the dotted line upward from 358 to the 500 watt curve, and then horizontally shows that we would have to space 500 watt units 1 1/4 inches apart. If we used the figure "150" first obtained from Table 1, we would have a choice of 150 watt units on 12" centers, 200 watt units on 18" centers, or 300 watt units on 24" centers. In this case, either the 150 or 200 watt units should be used. These points are shown by dotted lines.



FOURTH: Determine type of reflector from Chart 2 and notes on following page.

FIFTH: Determine manufacturer's number, holder, price, etc. from pages 7-12.

SIXTH: Determine amount, wiring and control from pages 16-19.

#### Specification booklet, pages 2 and 4

ticle, the other side is cross ruled into 1/2-in. squares for convenience in making sketches.

All members of the association who are directly interested in this campaign have been listed. Each of these men has been provided with the specification booklet and a supply of survey forms, and when everything is all set to go an evening will be spent in instruction in making layouts and discussion of selling methods.

#### Committee Aid Available

Any member who has a good prospect, but is not quite able to get the signature on the dotted line may call on the committee for help and will be given the assistance of an expert salesman. Every layout made may be submitted to the committee and if found correct will be stamped to show that it has been officially approved. It is anticipated that this official approval by the committee will carry considerable weight with the prospect. The committee will also furnish expert assistance in making the layout.

The local central station company, the Consolidated Gas, Electric Light and Power Company of Baltimore maintains in its showrooms a completely equipped show window in which an almost infinite variety of effects may be

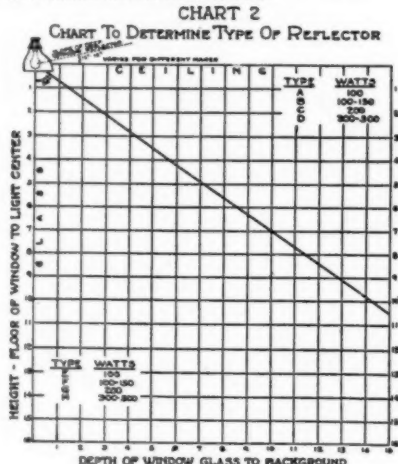
demonstration of the possibilities of window lighting by the company's specialist in this branch of illumination.

The campaign will be thoroughly advertised in the newspapers and it is expected that some inquiries will be received at the association office. In case a prospect is obtained in this manner

#### To use Chart:

1 Lay off the height of the window on the left-hand scale, measuring from top down. From this point draw a horizontal line equal in length to the distance from glass to background. This represents the floor and the distance may be read on the bottom scale. From the end of this line, draw a line vertically to a point corresponding to the height of the trim or solid background (each square represents one foot). This point may be determined also by measuring down from the ceiling and reading on right-hand scale.

If this final point falls above diagonal, ascertain type of reflector from table in upper right corner; but if it falls below the diagonal, ascertain type of reflector from table in lower left corner.



#### Specification booklet, pages 5 and 8

he will be given a list of the association members who are qualified to do this work with the suggestion that he make

REFLECTOR MOUNTING	
M	Outlet boxes with receptacles in cover, mounted exposed on ceiling and wired in right conduit exposed.
N	Outlet boxes with receptacles in cover, mounted on ceiling and wired in 3-1 concealed.
O	White mounted flush with finished ceiling using flush mounting rings and wired with 3-1, concealed work. See Work only.
P	Pittsburgh Conduit on ceiling wired complete. In specifying this be very careful that all dimensions are given, as this is made in factory from your drawing.
Q	Curtainity on ceiling wired complete.
R	Two row mounting using Pittsburgh conduit of Curtinity. See Work only.

Such contacts with these and other similar organizations will undoubtedly be very effective in making sales.



# When and for What Is the Subcontractor Liable

By LEO T. PARKER  
Attorney-at-Law, Cincinnati, Ohio

THE rights and liabilities of a subcontractor depend upon his business relationship to the owner or principal contractor. A subcontractor who merely is an employee of the owner, or the principal contractor, is not liable for losses from contracts, injuries to workmen or other damages.

It is very interesting to observe that in a case recently decided, the Court explained when a subcontractor is and when he is not liable for the acts of his employees. This Court said that where an agreement provides that work shall be done by a subcontractor *who has the exclusive right to use his own judgment as to how the job is to be completed*, then the latter is responsible. But where a subcontractor contracts to perform work for a contractor or owner who retains the right to supervise the work, hire and discharge the workmen, then the subcontractor legally is a mere employee who is *not* personally liable in damages or for contract losses.

In another case, where the same point of law was involved, the Court said:

"Where the arrangement is that a subcontractor is to receive instructions from a principal contractor as to how the work is to be done, and has no authority to give directions as to the manner in which it should be performed, or as to the means to be used in performing it, then there would be the relation of master and servant . . . And it is well settled that where one lets a contract to another to do a particular work, reserving to himself no control over such work except the right to require it to conform to a particular standard when completed, he is not liable for the negligence of the party to whom the contract is let, because the relation of master and servant does not exist."

This same Court said further that "an independent contractor is one exercising an independent employment under a contract to do certain work by his own methods, without subjection to the control of his employer except as to the product or result of the work. When

IT is of the utmost importance for a subcontractor to know just what his legal rights and liabilities are in connection with work he may be performing. Is he answerable to the general contractor or to the owner? Is he liable for the acts of his employees? These and other important matters that may have a direct bearing on the success of the subcontractor are pointed out in this article.—The Editor.

the person employed may prescribe how the work is to be done, or who is to do it, the person so employed is a contractor and not a servant. The fact that the work is to be done under the direction and to the satisfaction of a principal contractor does not render the person contracted with to do the work a servant."

In other words the law is well established that the legal relation of an independent contractor and a mere employee is not to be determined solely by the fact that the owner or principal contractor is permitted, to a certain degree, to supervise the work. The relationship is determined by the whole contract which exists between the contractor and the employer on its face, and not by a single paragraph. Generally speaking where a person is employed to perform work, and retains the right to hire or fire the men and assumes the responsibility to pay them, he is a contractor and is liable as such.

Irrespective whether a person is a principal contractor or a subcontractor, his liability is the same if he performs work not in accordance with the plans and specifications, or if an employee is injured.

## Change in Plans

A very common source of litigation is where a contractor enters into a contract which stipulates that the owner "reserves the right to alter or modify the work as it progresses."

In view of the numerous previously decided cases involving this point of the

law it is certain that a contract of this nature is valid. However, as legal controversies of this kind usually involve the extent of the alterations which the owner may legally make without paying additional charges, a review of the leading cases is interesting.

In a recent case the Court held an owner not within his rights in ordering certain changes and explained the law as follows:

"We think that any material departure from the plans and specifications . . . which resulted in a new and substantially different undertaking, cannot be regarded as within the meaning of the contract. We think it was only intended to describe and provide against those ordinary and comparatively unimportant departures from the details in the plans and specifications, which during the progress of the work might become necessary, or at least needed to effectually complete the work as it is contemplated by the plans and specifications. . . . We cannot admit that a party entering into a contract to do a given work at stipulated prices, can . . . be made to do a different and more expensive work . . . by the architect, or by any of the other parties."

## Changes Must Be Reasonable

Therefore, the law is well established that a provision in a contract by which the owner reserves the right to modify the plans and specifications as the work progresses, without change in the contract price, legally means that where the owner orders radical alterations made, the contract price is automatically changed accordingly, and in reasonable consideration of the additional work done by the contractor. In other words, the Courts require the owner to confine the alterations to changes that will not unreasonably increase the contractor's expenses.

On the other hand, it is interesting to note that the Courts have consistently held that the owner is *not entitled to make deductions from the contract price where he authorizes alterations*

made by which the contractor is permitted to utilize cheaper fixtures.

Also, it is important to know that where a contract specifies that alterations may be made from the plans and specifications by order of the owner, and the contractor proceeds to make alterations ordered by a person who is not an authorized agent of the owner, the contractor is personally responsible for the alterations, and may be compelled by the owner to replace the work in accordance with the original plans and specifications.

#### "Approval of the Owner"

Moreover, the subcontractor is likewise affected. For instance, in a recently decided litigation it was disclosed that a contract specified that "no alterations shall be made from the plans and specifications without approval of the owner." The principal contractor proceeded to make alterations ordered by an architect and the various subcontractors were ordered by him to alter their work accordingly. The Court held that the subcontractors were not entitled to recover from the owner for the extra work done.

At various times the Courts have held that where a disagreement exists between an owner and a contractor, or a subcontractor with regard to a deviation from the plans and specifications ordered by the owner, the question of whether the contractor is entitled to additional remuneration should be submitted to an arbitration board or a jury for careful consideration and decision.

For illustration, the facts of a recent case are that a contract specified that the owner reserved the right to make necessary changes and alterations in the plans and specifications, as the work progressed. The alterations ordered by the owner resulted in a subcontractor expending considerably more money than would have been expended had the original plans and specifications been carried out. The owner refused to pay the subcontractor for the extra work and the latter instituted legal proceedings to compel him to do so. The details of the complete controversy were carefully considered by a jury who also examined the work actually done, and a decision was made in favor of the subcontractor for the amount of the rendered bill.

Still another very common source of litigation is where a contract specifies that the work when completed

shall be "satisfactory" to the owner.

It is important to know that a clause of this kind *does not mean that the owner is privileged to refuse to pay for work simply because he states that he is not satisfied.* In other words, where the work done would be satisfactory to a "reasonable" person of average intelligence and prudence, the Courts hold consistently that the owner is bound to pay for the value of the services rendered.

For example, in a recent case involving this point the Court in effect said that where an owner stipulates in a contract that he shall not be required to pay for the work done unless he is satisfied, he cannot avoid settlement simply because he contends the work is not satisfactory, if the contractor introduces testimony to show that the completed work would be accepted and paid for by a man of average experience and prudence.

#### Approximate Price Not Binding

Still another course of common litigation is where a contractor, not knowing the exact cost of the work to be done, submits a conditional bid. For illustration, in a case decided within the past few weeks, it was shown that a contractor submitted an offer to an owner which specified in part, as follows:

"All materials supplied by us are to be invoiced to you at current market prices, plus 10 per cent for profit. Labor to be charged to you at \$1.25 per hour . . . and, if any helpers are required, this time to be charged to you at the rate of 75 cents per hour. We expect the total cost of this work will be in the neighborhood of \$600, but it is distinctly understood that the price is merely an approximate one and not binding in any way, shape or manner."

The contractor proceeded to perform the work and rendered a bill to the owner to the amount of \$1,127. The owner refused to pay the bill on the grounds that the contractor had estimated the price to be \$600. The contractor then sued the owner for \$1,127. The Court rendered a verdict in favor of the contractor for the full amount of the bill and said:

#### Decision of the Court

"We are referred to many cases dealing with the interpretation of contracts containing the qualifying words 'about', 'more or less', etc.; but they are without

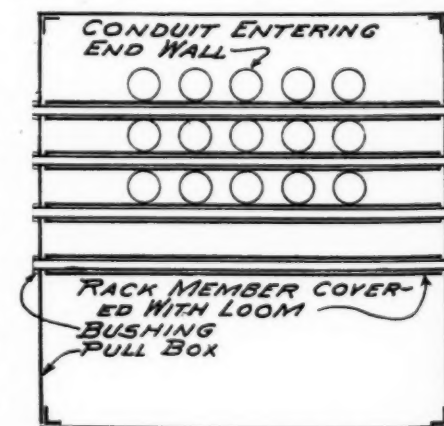
application here . . . the cost of labor and materials were most uncertain at the time the work was undertaken . . . , and estimates were difficult. The offer simply stated that it was expected the total cost would be in the neighborhood of \$600, but that it was to be 'distinctly understood that this price is merely an approximate one and not binding in any way, shape or manner'. This was positive warning that plaintiff (contractor) would not be bound by the estimate. . . . Under such circumstances, plaintiff (contractor) cannot be bound by the suggested cost, and is entitled to the value of the work done and materials furnished under the terms of the contract."

The outcome of this litigation decided by the higher Court is very important to contractors and subcontractors. And the above clause should be included in all conditional bids, because the law is thus established.

#### Cable Rack in Pull Boxes

In large pull boxes such as found at switchboards where a large number of circuits converge, the arrangement of the cables in the box requires careful consideration if the box is not to be considered a "tangle-box".

One contractor has vertical rows of  $\frac{3}{4}$ -in. knockouts punched opposite one another in the front and rear of the box. The vertical spacing is not less



than the spacing of the conduits leading into the box. The rows of knockouts are spaced about 3 or 4 ft. apart. Pieces of  $\frac{3}{4}$ -in. conduit, a little longer than the width of the box, are inserted in the knockouts wherever needed and are used for racks. They are secured in place by conduit bushings on the outside of the box. A cushion for the cables may be provided by slipping circular loom over the racks.



# Estimating Methods

Standardized Work  
Layouts  
Check Figures

Supervision  
Non-productive Labor  
Job Expense

By ARTHUR L. ABBOTT

Technical Director, Association of Electragists, International

THE experience of many estimators over a term of years has conclusively demonstrated that, except in certain special cases, there is only one method which can be considered satisfactory for estimating the cost of electrical construction work. This one acceptable method is to first take off a complete list of the material required for the installation, and then to compute the labor cost by applying the proper labor units to the material items.

The special cases which are exceptions to this rule are certain classes of work which consist of *standardized* operations.

A good example of standardized operations is found in house wiring. Under fixed local requirements, in a definite type of house, and at fixed prices for labor and materials, a complete service to supply a given load will always cost approximately the same amount of money. In estimating the cost of a job after this sum has once been determined it may be set down at once without making a detailed calculation of the labor and material cost for every job. In the same way, with all conditions fixed, a ceiling outlet on the first floor represents a definite cost of labor and material and this cost having been previously determined may be set down at once. The operations being standardized, that is, always requiring the same quantities of material and labor, much time can be saved by determining the cost once for all from a study of actual job records, instead of repeating the calculation every time a job is to be figured.

## Two Examples

A contractor specializing on power work in printing plants, for instance, would find it possible to make up a single cost figure to cover the branch circuit wiring and connection of a 5-h.p., 220 volt d.c. motor equipped with a given type of controller and driv-

SINCE the conclusion of the first series of articles on electrical estimating which were printed in these columns in 1925, we have had numerous requests for more estimating articles. In answer to that demand we have arranged with Mr. Abbott, who is undoubtedly the foremost authority on this subject in the United States, to write a complete series of articles covering every phase of electrical estimating. This series will run a year or more and will be a regular monthly feature of the THE ELECTRAGIST.

—The Editor.

ing a given type of press with the motor at a standard distance from the distribution center because the entire operation is standardized.

Another specialist has worked out a selling price per lumen delivered on the working plane for a complete lighting system, including wiring, lamps and fixtures, in a certain particular type of industrial plant.

With the exception of such standardized operations, that is to say, operations which are repeated many times and which always require the same items of material and the same labor, the cost of electrical construction work can be estimated only by making up the complete list of material, and then computing the labor by using units which take into account the type of construction of the building and the conditions under which the work must be done. This statement, of course, is true only when the term "estimate" is understood to mean an accurate predetermination of the cost of the job, which is the meaning the term has to the contractor who is a real business man rather than a gambler.

It follows then that the estimator

must know exactly what work must be done, otherwise he can not make a real estimate of the cost of the work. This means that the job itself is *laid out*, also that certain facts about the building are definitely known.

## The Estimator's Work

Unfortunately, it is the exception for the architect or engineer to furnish complete plans and specifications for electric wiring. The estimator's first step, therefore, must be to read the specifications and make full notes (a) of all points fully covered, (b) of points mentioned but left doubtful, (c) of points not mentioned at all. As the next step, items under heads (b) and (c) must be cleared up if this is in any way possible.

It frequently occurs that certain important items are in doubt and the architect or engineer can not be reached, or can not or will not give the necessary information. In such a case there seem to be only two alternatives: Either take no chances, thereby throwing your bid so high that it is a moral certainty that you will lose the job; or figure the work to be installed according to common good practice and take the risk of losing money if you secure the contract. But however the matter may be settled the estimate must be based on definite and complete specifications either furnished by the architect or engineer or else set up by the estimator.

Because branch circuit conduit runs must be scaled off the plans these runs must be laid out if the plans as received are incomplete in this respect. A branch circuit layout for estimating is most simply made with colored pencils direct on the blueprints. If the plans must be cleaned up before they are returned yellow and white pencils should be used because the lines can be cleaned off with gasoline. Lines drawn with red pencil, if at all heavy, can only be removed by much rubbing with an eraser.

It is an invariable rule with efficient contractors to furnish to their workmen complete layouts of all pipe jobs. It is desirable to preserve the estimating layout so that if the contract is secured this layout can be followed in making the working plans. If the architect's plans can not be kept it is often a practical plan to tack a sheet of thin, inexpensive tracing paper over each blueprint on a drawing board and make the layout on this paper with a soft black pencil, the material quantities being taken off each plan while the tracing paper is still in place over the print. The tracings are then kept on file until the contract has been awarded.

The branch circuit layout should show each outlet, each run of conduit, the size of each run and the number and size of wires it contains. The Electragists' Standard Symbols may well be used, though it is customary to use distinguishing marks only to indicate conduit larger than 1/2-in., wire sizes larger than No. 14 and more than two wires per conduit.

#### Riser Diagram

A complete set of plans for any but an extremely simple job always includes a "riser diagram" (some of the "risers" do not rise at all but run on a level). If such a diagram is not furnished to the estimator he should by all means make one.

A complete riser diagram shows all switchboards, cabinets, pull boxes, feeder support boxes, conduit for feeders and sub-feeders, and usually all motors and other power-consuming devices and all power branch circuits. Vertical lighting branch circuits, such as circuits for stairway outlets, for elevator car lights and for exit lights may be included. The size of each conduit and the size and number of wires in each should be indicated.

For the sake of clearness, the diagram should show the various parts of the installation in approximately their relative positions, though no attempt is made to lay off horizontal distances to any fixed scale. It is best to lay off the lines indicating the floor heights to the same scale as is used for the floor plans if this can be done conveniently. In any case the heights from floor to floor should be given.

Data pertaining to the building itself must include full information on the type of construction to be used for floors, walls and columns, as well as

floor plans and sectional elevations. The location of all suspended ceilings and their heights above the floor are very important items. It is highly advisable to look over the plumbing, heating and ventilating plans to discover how much interference there will be between the electrical and mechanical equipment.

#### Check Methods

As stated before, short-cut methods of estimating can be successfully used only on *standardized* work, or work where the same operations are repeated many times under identically the same conditions. For general estimating there are no good short-cut methods.

On the other hand, certain check figures can be developed which will be very useful to the estimator. These figures should be worked up by each estimator for himself, or better still by a local group of estimators who are broadminded enough to exchange information.

The general method in compiling check figures is to split up each complete estimate into parts, the cost of which can be reasonably worked out on some unit basis. A record is kept in a loose-leaf book which gives the cost per unit of each part of the installation and the principal facts in regard to both the wiring installation and the building. After a number of jobs of the same general type have been analyzed in this way and the unit costs have been recorded the averages are used as check figures.

Let us take an example a school building of medium size. The installation in a building of this kind may include the following systems:

- Wiring for lighting
- Wiring for power
- Clock and program bell system
- Fire alarm system
- Intercommunicating telephones
- Conduit for public telephones

The cost of labor and material for each of the six systems should first be figured from the estimate.

Check figures on wiring for lighting have commonly been made up on a "per outlet" basis, that is, by merely dividing the cost of this part of the job by the number of outlets. A much more logical method has been proposed by A. J. Allyn of Detroit, Mich. The cost of the light wiring is divided into two parts, (1) the branch circuit work—conduit, wire, outlet boxes, recep-

tacles, switches, etc., and (2) all other work from the service entrance to and including the panelboards and cabinets. The cost of the branch circuit work per outlet is then found, and the cost of the remainder of the work is divided by the total number of branch circuits, giving a cost per circuit. The use of these two figures should give much more satisfactory results than using the cost per outlet of the entire installation.

Following the same general idea, the power wiring should also be divided into two parts (1) branch circuit wiring from the cabinet to the motors, including the erection and connecting of the starters or controllers and connecting the motors, and in this case including also the cost of material and labor for the branch circuit cabinets and panelboards, and (2) the remainder of the installation. The cost of the first division should be divided by the number of motors, and the average horsepower of the motors should be noted, giving the cost per motor of the branch circuit wiring for a certain average size of motor. The cost of the second division should be divided by the total horsepower of all motors, giving a cost per horsepower for the service, feeders, etc.

The clock and bell system may well be divided into two parts, the cost being figured for the master clock, program machine, storage battery and charging equipment as one item, and the cost per clock being computed for the secondary clocks, bells, conduit, wire, etc.

For a simple fire alarm system the cost per station will be satisfactory. The cost per station of the intercommunicating phone system is the figure wanted, with a record of the number of stations. The public telephone conduit system is usually very simple and the cost per outlet should be computed for this.

All these check figures must for convenience be total costs of materials and labor and hence will be rendered inaccurate by any changes in material prices or wage rates. However, if systematically compiled on all jobs estimated the general trend of changes will be indicated, and they will be found very valuable for checking complete estimates and for making up approximate preliminary estimates. It must always be borne in mind, however, that no such figures can ever be successfully used for



making up the real estimate on a definitely specified job, for the purpose of submitting a definite bid.

#### Supervision, Non-Productive Labor and Job Expense

These terms have been used with various meanings. It is not so important how they are defined, so long as the sense in which the terms are used is clearly understood. The basic reason for the definitions used here is that by defining these terms in this manner we make it easy and simple to fully cover these items of cost in the estimate.

Supervision is the time spent by one or more of the men on the job in the general direction of the work. It includes assigning specific parts of the work to the other workmen, looking up details of the electrical or building work, getting certain necessary information from the building superintendent or from the general contractor's representative, directing the disposition of material, checking the supply of tools and their condition, and many other similar items. It does not include locating outlets or other devices nor any work with the tools, and it does not include the supervisory work of a general superintendent or of an engineer working from the contractor's office.

In the case of a very large job, referred to in this case as an "operation," the contractor may set up an engineering office on the job. In estimating, also for the purpose of keeping cost records on a comparable basis, in such a case the rule should be followed of considering as supervision only such time as is spent in performing the ordinary duties of the job foreman on the smaller classes of work.

Non-productive labor is best defined under three heads. The first of these is traveling time which must be paid for. The second is all time spent in handling material, which for standard wiring materials should include unloading and loading trucks and checking material delivered at the job or shipped from the job. In the case of conduit and conduit fittings, handling material will also include taking it from storage and distributing it throughout the building as needed. In the case of heavy apparatus, such as switchboards and large transformers, the material is usually taken direct from the truck or car to its final location, and all this

labor is best treated as productive labor and not as a part of the "handling material" time.

The third division of non-productive labor is lost time. This will include time during which men are on the job and being paid but are not doing any work, and time spent in tearing out and replacing work which has been improperly installed, or correcting other defects.

Job expense consists of certain expense items which in general are not costs of material nor wages paid, but which are directly chargeable to the job. An expense item on every job is workmen's compensation and public liability insurance. This is neither wages nor material cost but is always a part of the cost of the job. Another expense item is a surety bond, if a bond must be furnished. An item which is sometimes considered as non-productive labor is building a temporary storeroom. While the electrical contractor may buy the material and use his own workman to erect the building, he may on the other hand arrange with the general contractor to furnish the building. In either case this is best handled as part of the job expense. Other common job expenses are freight, express and cartage, traveling expense, inspection fees, and board and lodging for employees on out-of-town work.

#### Supervision 10 Percent

Supervision, as defined here, is found to be approximately 10 percent of the total labor, regardless of the number of men employed on the job. Supervision can therefore be included in our labor units, and has been included in all the labor units which will be presented in this series, so that no additional allowance need be made for this item.

If traveling time must be paid for the amount of money to be so expended can easily be computed. An approximate idea of what constitutes a reasonable allowance for the two items of handling material and lost time may be gained by means of the following rule: The time required for handling material, plus the lost time, is 3 percent of the total productive hours of labor, when this total is less than 1000 hours; for each additional 1000 hours, add .2 to the percentage. Thus, if the estimated productive labor is 5000 hours, the percentage is found in this manner:

First 1000 hours -----	3.0 percent
4 additional thousands at	
.2 -----	.8 percent

Total ..... 3.8 percent

The time allowance for the two items is then 3.8 percent of 5000 hours, or 190 hours.

The amount of all items of job expense can be easily computed. The cost of the bond, insurance, and inspection are exact figures which are easily determined. The costs of all other items can be quite accurately estimated on the basis of past experience.

All the above discussion applies to the very smallest jobs as well as to larger work, except some of the statements concerning non-productive labor. In estimating small work, that is, jobs requiring up to about 150 or 200 hours of productive labor, the non-productive labor is best taken care of by adding a flat allowance of a sufficient number of hours to fit the conditions. This lost time will include such items as going to and from the job, unloading material and tools, picking up material and tools to be returned to the stockroom, etc. On jobs which require a very small amount of productive labor, as for example 6 or 8 hours, the lost time may be a large percentage of the total, and it is necessary to include it in the estimate.

(Continued in the July issue)

#### Provision for Foreign Control on Theatre Circuits

Some theatres are designed for occupancy by travelling companies. These often have special electrical effects that they wish to have under their own control. The matter of inserting these foreign controls into the existing theatre circuits has always been a make-shift job.

In the new theatres owned by the Chanin Construction Company, New York, special provision has been made to conveniently insert foreign controls into the stage circuits. At a convenient place between the stage control board and the point of utilization, pull boxes are installed in which separable pin connectors are provided for each circuit. All that is then necessary to insert foreign control is to open separable connector and connect the foreign control lines, which have similar connectors on their ends.



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TREASURER, GEN. COMM.



C.H. CHAPLINE  
CHAIRMAN, GEN. COMM.



CARL H. CHRISTINE  
SECRETARY, GEN. COMM.



FRED B. ADAM  
CHAIRMAN, HOSTS COMM.



A. C. BRANDT  
CHAIRMAN, PUBLICITY COMM.

**Committeemen for  
ELECTRAGIST CONVENTION  
ST LOUIS, MO.  
1927**



GEORGE CORRAO  
CHAIRMAN, OPERA COMM.



B.W. FRAUENTHAL  
CHAIRMAN, TRANSPORTATION COMM.



C. MICHEL  
GENERAL COMM.



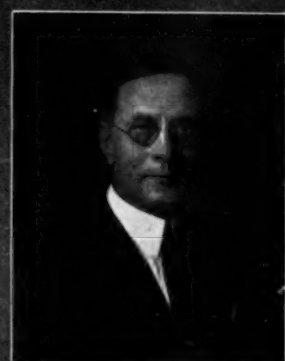
F.A. RICK  
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C.J. SUTTER  
CHAIRMAN, STYLE SHOW COMM.



MARTIN J. WOLF  
CHAIRMAN, PROMOTION COMM.



C.E. ALLEN  
GENERAL COMM.



HERMAN SPOEHRER  
CHAIRMAN, GOLF COMM.



# Committees Preparing Plans for Electragist Convention

## St. Louis Men in Charge of Various Features Report Progress on the Tasks That Have Been Assigned to Them

THE St. Louis members of the Association of Electragists, International, who have charge of the various activities of the annual convention which is to be held in that city from August 9 to 12, report that work on the tasks that have been assigned to them is progressing rapidly.

At a meeting held recently under the chairmanship of C. H. Chapline the members of the general committee and the chairmen of the various subcommittees who have charge of the work made enthusiastic reports. The general committee includes the following chairmen of the subcommittees: Fred B. Adam, hosts committee; A. C. Brandt, publicity committee; George Corrao, municipal opera committee; B. W. Frauenthal, transportation committee; F. A. Rick, ladies' committee; C. J. Sutter, style show committee; Martin J. Wolf, promotion committee; Herman Spoehrer, golf committee; Mrs. C. J. Sutter, hostess committee, and C. E. Michel, Frederick A. Kehl, treasurer; C. E. Allen and Carl H. Christine, secretary.

The hosts committee has the task of preparing the badges to be worn by the various committee members, automobile stickers for pasting to the windshields of automobiles in use at the convention, maintaining the information booths at the Union Station, St. Louis, and at the Hotel Chase, which is to be the scene of the business sessions. The booth at the station will be manned by members living in St. Louis whose duty it will be to guide and direct the arriving members and look after them until they have registered at their hotel.

### Municipal Opera

The municipal opera committee will provide each out-of-town delegate with a ticket to the municipal opera which is to be held on the night of the 9th in the St. Louis Municipal Theatre in Forest Park, the largest municipally owned outdoor theatre in the world. With ad-

ditional improvements each year, this playhouse has been developed into a permanent concrete auditorium which has a seating capacity of almost 9,500, and the open air opera given under municipal direction has come to be one of the major attractions of St. Louis each year. The profits from all performances in the auditorium are used for further beautification of the theatre and the grounds surrounding it.

### The Style Show

The annual style show of St. Louis is another function of tremendous interest that will be available for delegates and their friends and relatives at the convention. The work of Mr. Sutter's committee will provide each out-of-town delegate with a ticket to this event on the night of August 10. This function is also held in an outdoor theatre and is recognized as the most complete animated exposition of styles ever staged. In conjunction with it are held vaudeville acts, circus acts and water sports, and scenic effects with an entertaining display of the newest styles on living models are presented in a most attractive manner.

This show is designed primarily as a trade exposition and entertainment for the merchants of the Mississippi Valley and the Southwest trade zone, but is an entertaining and fascinating event even to those not directly interested in its commercial phases.

Providing transportation in connection with the golf tournament on August 8, the day before the business sessions of the convention are scheduled to begin, for the municipal opera, ladies' bridge party, style show and ladies' theatre party, all of which are on the entertainment schedule, is the task laid out for the transportation committee in charge of B. W. Frauenthal. Tuesday morning, August 9, has been set aside for visits to manufacturing plants in St. Louis, and transportation for visitors to these establishments

is to be furnished by the companies.

The golf committee has arranged for permission for the delegates to play over the famous course of the Riverview Club. This course is especially attractive and is laid out along the banks of the Mississippi River. The club has in addition to its splendid links an outdoor swimming pool, and this, too, has been made available for the visitors. The ladies' bridge party which has been set for Wednesday will be held at the Riverview Club, whose spacious house will provide excellent accommodations for such an event. The ladies' committee, under the chairmanship of F. A. Rick, has charge of this function as well as the theatre party which is on the entertainment schedule for the ladies on Thursday afternoon, August 11.

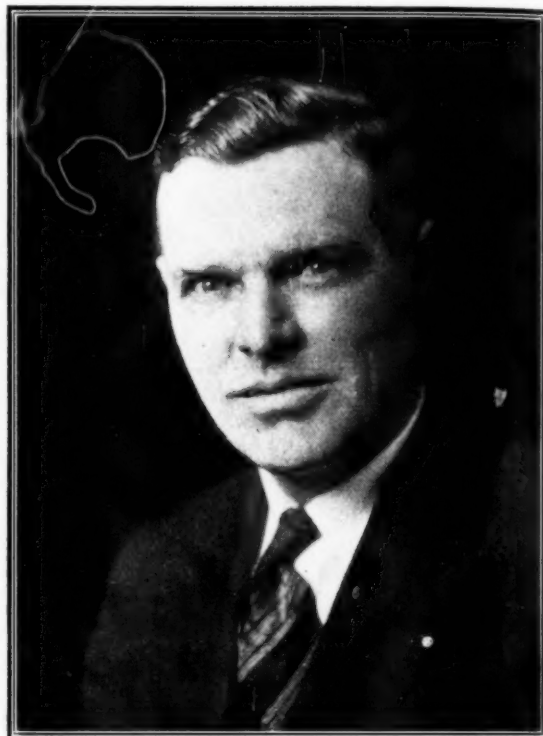
### Make Your Reservations

Chairman Chapline has made a plea that those who are going to attend the convention send in their room reservations at the earliest possible moment. The committee in charge of hotel accommodations has listed all the hotels in the vicinity of the Hotel Chase, where the convention is to be held, and this list was printed in the May issue of THE ELECTRAGIST, together with a list of the rates for various accommodations offered by the houses. Assignments to the rooms are to be made on July 1, and will be made in the order of receipt. Five hotels in addition to the Chase have been selected by the committee, all of which, except one, are within a few blocks of the convention hotel, and a direct bus line will be in operation between that one and the Chase. When the assignment of rooms is made the members who have sent in their reservations will be notified of the rooms assigned to them.

Carl H. Christine, secretary, care of St. Louis Electrical Board of Trade, Telephone Building, has charge of reservations.

### W. C. Burton, St. Louis

ONE of the active members of the electrical fraternity of St. Louis in preparing for the annual convention of the Association of Electragists which is to be held there in August is William C. Burton, president of The W. C. Burton Electric Company. Mr. Burton came into the electrical industry immediately after his graduation from school. His first job was with the Frank Adam Electric Company, St. Louis, as a stock boy. He remained in that capacity for some time and later worked in the wiring department of the company. After some time there he branched out for himself, forming The W. C. Burton Electric Company, of which he is president. This organization has to its credit some of the largest installations in St. Louis and vicinity, and is augmented by a general repair business. Three years ago the Frank Adam Electric Company discontinued its wiring department to devote all its attention to the manufacture of electrical apparatus, and Mr. Burton was given the opportunity of consolidating that business with his own. He thus became head of the combined organizations. Mr. Burton was born in Webster Groves, a suburb of St. Louis, in 1891, and all his time since leaving school has been devoted to the electrical business in St. Louis. He has always taken an active part in the affairs of the contracting branch of the electrical industry. He is a member of the Association of Electragists, International, the St. Louis Electrical Board of Trade and various local organizations of contractors and contractor-dealers.



## Electragists You Should Know



### Robert T. Morrison, South Orange

ROBERT T. MORRISON, president of Morrison-Turbett, Inc., South Orange, N. J., entered the electrical industry in 1905, following a successful career as proprietor of a news-stand in Newark, N. J. He was born in that city in 1887, and being compelled by circumstances to start work at eight years of age he operated the stand after school hours and on holidays. Nine years later he sold this stand at a fine profit, and at the age of seventeen became an apprentice wireman. After working for four years under six different bosses he went in business for himself and soon afterward entered a partnership with another electrical contractor. This proved unsatisfactory and he broke away from this organization to start another. He then formed a corporation with his present partner, Lewis Turbett, in April, 1916. Neither of the two partners had any money, but a lawyer was found who was willing to prepare the necessary papers and attend to the legal matters involved on a promise of pay if the enterprise succeeded. The company has experienced constant growth almost since its beginning and several successive moves to larger quarters have been necessary. At present the only contracting work done by the company is in the rewiring field, and enough of this business is available to keep at work a force averaging twelve men. The company bought its present location several years ago. The retail store and contracting have both paid dividends from the start. Mr. Morrison is also a member of The Society for Electrical Development, the Kiwanis Club, and South Orange Business Men's Association.



## A Detailed Guide for

# Standard Electrical Specifications

**P**OOOR specifications by the architect or engineer is one of the most frequent complaints of the electrical contractor. In order to improve this condition in their own locality the estimators' section of the California Electragists, Southern Division, has drawn up in pamphlet form a "Detailed Guide for Standard Electrical Specifications" which will be given to all interested architects and engineers. It is printed below.

In the preparation of these standard electrical specifications local architects furnished their specifications for different kinds of buildings. Unnecessary wording and phrases

were eliminated and in places where it was found necessary substitutions were made.

The California standard is in two parts: General Conditions and Specification Form. The former is much simpler than the standard document of the American Institute of Architects, although in numerous instances the same wording is used.

It is felt by those who drew up this guide for standard specifications that a general use of it will tend to greatly eliminate uncertainties in estimating and provide much more uniform conditions for bidding.

### THE ESTIMATORS' SECTION OF THE CALIFORNIA ELECTRAGISTS

Southern Division

*Submits this Guide with the hope that it will be of use in writing Electrical Specifications*

#### GENERAL CONDITIONS

**SCOPE OF THE WORK**—The work to be done consists in providing all materials, appliances, equipment, tools, labor, etc., unless otherwise stipulated, necessary to erect a certain electrical system in the Owners premises at....

in accordance with the following specifications and accompanying drawings.

**DEFINITION**—The term Owner, when used herein, shall mean.....  
.....of the party of the first part. The term Architect, when used herein, shall mean.....  
.....or his representative. The term Contractor, when used herein, shall mean.....  
.....party of the second part.

**THE CONTRACT**—The agreement, and general conditions of the Contract, the specifications and the drawings form the Contract, and they are hereinafter called Contract Documents. They shall be signed in duplicate by the Owner and the Contractor. Neither party shall assign the Contract without the written consent of the other.

**INTENT OF DOCUMENTS**—The Contract Documents are complementary and what is called for in one shall be as binding as if called for by all.

The Documents are intended to include all the details of labor and material reasonably necessary for the proper execution of the work. If material or workmanship is described in words which so applied have a technical or trade meaning they shall be held to refer to recognized technical or trade standards.

**BIDS**—The Owner shall not be bound to accept any of the bids submitted nor incur any

liability for the preparation of bids. No claims shall be made for the alleged lack of information after bids are accepted.

All drawings and specifications shall be returned to the Architect when the bids are submitted.

**DRAWINGS AND SPECIFICATIONS**—The Contractor shall carefully study and compare this specification and the drawings, as they will be enforced in every detail, unless cancelled in writing before Contract is signed.

The Architect shall furnish, by means of drawings or otherwise, additional instructions necessary for the proper execution of the work. All such instructions shall be consistent with the Contract Documents and the work shall be executed in conformity therewith.

The Contractor shall at once report to the Architect any error, inconsistency or omission which he may discover.

The Architect shall furnish to the Contractor, free of cost, two copies of the specifications, and three of each drawing. Additional copies may be obtained at the cost of reproduction.

The Contractor shall submit to the Architect two copies of all shop drawings and schedules required for the work.

The Architect's approval of such drawings or schedules shall not relieve the Contractor from responsibility for deviations from drawings, or specifications, unless he has called to the Architect's attention in writing such deviation and filed with said drawing a copy of the said letter.

The Contractor shall keep one copy of all drawings and specifications on the work in good order, available to the Architect and to his representative.

**PERMITS AND INSPECTIONS**—The Contractor shall obtain permits at his own expense to comply with the rules of the National Board of Fire Underwriters, the State Industrial Accident Commission, and the local City Ordinance, anything on the drawings in the specifications to the contrary, notwithstanding. In case the Contractor shall violate any ordinance or rule he shall immediately correct the installation, and he shall be held respon-

sible for any and all damage and expense arising therefrom.

**FAILURE OR DELAYS**—If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this Contract, the Owner, after three days' written notice to the Contractor, may remedy such deficiencies and may deduct the cost thereof from the payment then or thereafter due to Contractor; provided, however, that the Architect shall approve both such action and the amount charged to the Contractor.

If the Contractor is delayed in the completion of the work by any acts or neglect of the Owner or the Architect, or of any employee of either, or by any other Contractor employed by the Owner, or by changes ordered in the work, or by strikes, lockouts or other causes reasonably beyond the Contractor's control, or by fire or other unavoidable casualties, or by delay authorized by the Architect pending arbitration, or by any other cause which the Architect shall decide to justify the delay, then the time of completion shall be extended for such time as the Architect decides to be reasonable.

No such extension shall be made for delay occurring more than three days before claim therefor is made in writing to the Architect. In case of a continuing cause of delay, only one claim is necessary.

**INSURANCE**—The Contractor shall maintain Workmen's Compensation and Public Liability Insurance.

The Owner shall effect and maintain Fire Insurance upon the entire structure on which the work of this Contract is to be done, and upon all materials, tools, and appliances in or adjacent thereto, and intended for use thereon, to at least eighty percent of the value thereof. The loss, if any, is to be made adjustable with and payable to the Owner as Trustee for whom it may concern.

**BOND**—(Here specify the bond to be required, if any).....

**PAYMENTS**—(Specify how payments are to be made).....

**ARBITRATION**—Should any question arise during the progress of the work, at the acceptance, or regarding settlement, such questions shall be referred to the Architect for decision. Should either party feel aggrieved at such decision, said party may appeal to two disinterested persons, one chosen by each party to this agreement, and in the event of the parties so chosen failing to agree, they are to choose a third, the decision of two of said referees to be final and binding on both parties.

Such determination shall be a condition precedent to any right of action. If no such appeal is taken within thirty days the decision of the Architect shall be conclusive.

**SUPERVISION**—The Contractor shall give efficient supervision to the work, using his best skill and attention. He shall, at all times during construction, keep a competent foreman on the work. The foreman shall represent the Contractor in his absence and all directions given to him shall be as binding as if given to the Contractor. On written request such directions shall be confirmed in writing to the Contractor.

**CHANGES AND EXTRAS**—Absolutely no changes in the work or substitution of other materials for those herein specified will be permitted, or extras allowed, except on written order from the Owner, approved by the Architect, and said order must state the amount to be added to, or deducted from, the contract price in consequence of such change.

**SYMBOLS**—Standard Symbols for Wiring Plans as recommended and adopted by the Association of Electragists, International, The American Institution of Architects and the American Institute of Electrical Engineers, and approved by the American Engineering Standards Committee on March 6th, 1924, shall be used.

#### SPECIFICATION FORM

**LOCATION OF BUILDING**—(A) Street number and between what streets. (B) Furnish plot plan showing location of light company and telephone company poles or manholes.

**TYPE OF CONSTRUCTION**—1. Class "A." All fireproof, no bearing walls, all loads carried on columns. 1. Walls—type of construction: Brick, hollow tile, concrete, with or without inside furring. 2. Floors—type of construction: Solid slab or pans. Give thickness of slabs. 3. Partitions—type of construction: Hollow tile, solid plaster, gypsum blocks, metal studs. 4. Ceilings—type of construction: Hung, give distance below slabs or joists. 2. Class "B." Masonry load bearing walls. All fireproof walls, floors and partitions. NOTE: Same specific reference to type of construction for walls, floors, partitions, and ceilings as for Class "A." 3. Class "C." Masonry walls, wood floors and partitions. 1. Walls—type of construction: Brick, concrete, or hollow tile, with or without furring. 2. Ceilings—type of construction: Furred down or lathed direct on joists. 4. Class "D." All types of construction other than included in Classes "A," "B," and "C" above.

**WORK INCLUDED**—Under these specifications and the accompanying drawings, the Contractor shall furnish all labor, and furnish and install all material for the following electrical work: (A) Electric light wiring complete but without fixtures except as noted in these specifications. (B) Electric power wiring as noted on drawings and specifications. (C) Other miscellaneous systems as specified further in these specifications.

**WORK NOT INCLUDED**—Fixtures, lamps, motor starters, motor controls, unless otherwise specified.

**MATERIALS**—Under these specifications all materials used shall be approved and listed by the Underwriters Laboratories of the National Board of Fire Underwriters.

**CONDUIT**—Specify manufacturers' makes as desired.

**WIRE**—Specify manufacturers' makes as desired.

**OUTLET BOXES**—Specify manufacturers' makes and types as desired.

**SWITCHES**—Furnish and install where shown on plans. Give height from floor and specify makes and types as desired.

**CONVENIENCE OUTLETS**—Furnish and install where shown on plans. Specify makes and types as desired.

**PLATES**—Specify finish and manufacturers' makes as desired.

**SPECIAL OUTLETS**—Specify—if any, such as ranges, heaters, signs, and all other heavy duty appliance outlets.

**FLOOR BOXES**—Specify manufacturers' makes as desired, also whether adjustable or non-adjustable.

**PULL AND ANCHOR BOXES, PANEL BOARDS**—Give locations and number to be installed. (A) Panel Boards are to be installed where shown on plans. (A-1) Give size and number of circuits. (B) State whether panel boards are to have circuit switches or fuses only. Whether they are to have single doors or double doors. Whether the cabinets are to be surface or flush type. Specify manufacturers' makes as desired.

**MAIN SWITCHBOARD**—(A) Give schedule of requirements and location, stating the voltage and type of service, number and size of switches, or circuit breakers, for the light, heat and power panels and the emergency circuit and also state whether metered or sub-metered. Specify manufacturers' makes and types desired.

**SERVICE**—(B) Give location of sub-meters if located other than on main board.

Specify size of conduit, number and size of wires, and location of service.

**SUB-FEEDS**—Specify size of conduit, number and size of wires, and arrangement of all sub-feeders.

**SUB-FEEDS TO SPECIAL OUTLETS**—Give size of conduit, number and size of wires.

**UNDERGROUND**—State type of construction whether rigid metal conduit or fibreduct encased in concrete.

State whether wire is to be double braid rubber covered or lead sheathed.

**FUSES**—State manufacturers' makes as desired, whether renewable or non-renewable.

**POWER WIRING**—Give motor size, conduit size and wire size, together with location and number. State whether to install and connect motors and starters.

**TELEPHONES—Public**: It is very important and necessary that the Architect incorporate in these specifications and in the building plans detailed provisions for a complete telephone distribution system of conduits and raceways that meet the requirement of the Telephone Company.

Since the problems presented are many and varied and different for each building, it is essential that the Plant Engineer of the Telephone Company be consulted in each case.

**Private**: Specify manufacturers' make and system. Number of phones, whether surface or flush.

**OTHER SPECIAL SYSTEMS**—Ventilation, clocks, bells, annunciators, fire alarms, silent call systems, radio, etc.

## A Level for Getting Elevations in New Construction

During the construction of buildings with concrete floors it is usually difficult to establish elevations because the floors or ceilings either are not finished or are obstructed. Bench marks or marks establishing elevation are usually given on a few columns by the architect. However, outlets for brackets, switches or receptacles are scattered all over a floor at a specified elevation.

The men of the Walter H. Taverner Corporation, New York contractors, were found establishing additional elevations by means of a water level.

This water level consists of a length of 1/2-in. rubber hose fitting tightly over 2-ft. long glass tubes at each end. The length of the hose depends on the greatest distance between columns. For instance, if the columns are 20 ft. apart, the hose is made no shorter than 28 ft., thus allowing 4 ft. for each upright leg of the hose when it is held against the columns. The hose is filled with water so that when the ends are held up together the water level appears in the glass. The water is often colored, involuntarily, and then shows its level more distinctly.

The free ends of the glass tubes are closed with cork stoppers when the level is laid down. The corks are tied to the ends of the hose to insure their presence when needed.

The electrical contractor picked up this idea from the marble workers that sheath the public spaces in buildings with marble slabs.

## Wiring Conference

(Continued from Page 22)

be dismissed with thanks and appreciation for their good work well done.

"7. That the reorganized conference of sales executives should invite the cooperation and participation of the associations of appliance manufacturers, the lighting equipment manufacturers and dealers and any other organizations of the electrical industry whose aid should be enlisted and that they take advantage of the services and benefits of all existing organizations and agencies that can contribute to its success, such as, for example, the Red Seal Plan and other services of the Society for Electrical Development, and the local electrical leagues."



# League-Utility Cooperation Aids Contractor-Dealers

Hudson Valley Electrical League Members and Central Hudson Gas & Electric Corporation Put in Operation a Plan to Foster Wiring and Appliance Selling

THE Hudson Valley Electrical League and the Central Hudson Gas & Electric Corporation, both of whose headquarters are at Poughkeepsie, N. Y., have put into operation a cooperative merchandising agreement whereby contractor-dealer members of the league are enabled to sell electrical appliances on a time-payment basis and a wiring agreement enabling them to install house wiring and fixtures, the payments for which can be extended over 18 months. In both cases the illu-

ganization of individual leagues in Poughkeepsie, Catskill, Kingston and Newburgh, are entitled to participate under the agreement.

## Conditions of the Merchandising Plan

The contractor-dealer agrees under the cooperative merchandising agreement to contract for such sales of appliances under the "appliance sales agreement," which is shown in connection with this article. The dealer further agrees that the contract price billed to the customer in every case will be the same as the list price of the appliance, including the installation charge, if any, plus the 6 percent charge on the balance due after the down payment by the customer. The down payment is at least 10 percent of the retail price, which the contractor-dealer retains. Notification of such a sale to the central station is made on an appliance sales blank, three copies of which are filled out. The first copy is sent to the central station, the second is reserved for the dealer's files and the third goes to the customer. The lower end of the second copy is perforated and contains a "certificate of delivery," which is signed by the purchaser when the appliances sold have been furnished and installed. This receipt is detached upon the acceptance by the customer, and sent to the central station, together with a voucher, which is also shown, properly describing the sale, and setting forth the amount of money due the contractor-dealer. This is checked and the central station reimburses the contractor-dealer as soon as possible, generally within a week. The balance due on the sale is collected from the customer on his regular monthly bills, the duration of these payments being limited to 12 months.

## Cost of Plan

After a thorough study, it was determined that it costs the central station 8 percent to carry the accounts, and this being a strictly cooperative effort, the

contractor-dealers and the central station agreed that in all fairness each should contribute 1 percent to make up the difference between the 6 percent carrying charge to the consumer and the actual 8 percent cost of carrying such accounts.

VOUCHER	
To be filled out and attached to each contract under the Cooperative Housewiring and Merchandising Plans CENTRAL HUDSON GAS & ELECTRIC CORP.	
To _____	Date _____
To cover contract on following wiring job:	
To cover contract on following appliance sale:	
Approved _____	Total _____

Payments are made to contractor-dealers by the lighting company on vouchers similar to the above

The company agrees to carry at any one time as much as \$4,000 in unpaid balances for any one contractor, but if the occasion should warrant, this clause may be modified.

The customer agrees to maintain the appliance in good condition until paid for, to permit the assigning of the contract to the central station, and that the appliance remains the property of the holder of the agreement until paid for.

Both the central station and the league desire to see the contractor-dealers who are operating in this territory conduct prosperous and independent establishments. For this reason it seemed advisable to encourage the contractor-dealers to stock and sell their own lines of appliances, rather than to rely on the central station's stock. In other words, it is felt that it would be advantageous to everybody concerned if the dealer would merchandise appliances not handled by the central station. However, should the contractor find it necessary to sell an appliance which the central station is merchandising, he may obtain it at a discount, but the account for this sale will not be accepted for the

## Contractor-Dealer Members OF THE Electrical League OF POUGHKEEPSIE

W. M. ANDERSON	Millbrook
J. K. BAHRET	Violet Ave.
FRANK DELAPINE	106 Delafield St.
L. L. JAMINET	14 Liberty St.
FRED KLOEPFER	65 College Ave.
JOSEPH LESPERANCE	19 Smith St.
CHARLES PARKER	New Bartz
E. A. POPPER	Wappingers Falls
P. F. QUIRK	932 Main St.
C. P. RAYMOND	59 Cannon St.
PAUL ROBERTS	Pine Plains
W. J. SLATER	10 Grand St.
TRAVIS ELECTRIC SERVICE	595 Main St.
I. B. VENABLE	49 Market St.



We believe in RED SEAL Wiring

Copyright 1924-S. E. D.

This card is carried by the central station's salesmen in Poughkeepsie territory to refer prospects for wiring to league members

minating company carries the notes of the purchasers and collects the payments when due on the monthly bills for current.

Only contractor-dealers who are members of the Hudson Valley Electrical League, which is the parent or-





# Chats on the National Electrical Code

*A Monthly Discussion of Wiring Practice and Questions of Interpretation,  
Presented with a View Toward Encouraging a Better Understanding of the In-  
dustry's Most Important Set of Rules*

Conducted by F. N. M. SQUIRES  
Assistant Chief Inspector, N. Y. Board of Fire Underwriters

## Double-Pole and Single-Pole Switches

A question which arises quite persistently is about the use of double and single-pole switches.

The 1920 Code required that (24C) "single-pole switches must never be used \* \* \* for the control of outdoor signs or circuits located in damp places \* \* \*," and that (8C—"Motor Switches") Each motor \* \* \* must be controlled by a switch \* \* \* so arranged that the opening of the switch will disconnect all of the wires \* \* \* except that "with two-wire motors of  $\frac{1}{4}$  h.p. or less on circuits where the voltage does not exceed 300, single-pole switches may be used."

The present Code, recognizing that nothing is gained by breaking a grounded neutral or dead wire, leaves out some of the restrictions formerly in force.

The above conditions are now covered as follows (1204b) "On constant potential circuits all service switches and all switches controlling circuits supplying current to motors or heating devices, \* \* \*, shall be so arranged that the opening of the switch will disconnect all ungrounded wires." and (1204a) "Single-pole switches shall never \* \* \* be placed in any neutral or grounded wire."

No special mention is now made of circuits to signs or in damp locations and therefore the only requirements to be met are those in Rule 1204. A comparison of the 1920 Code Rule 24C with 1925 Code Rule 1204a is quite interesting, as it shows that the omission of the requirement of double or triple pole switches on signs or circuits in damp locations was intentional.

But in spite of all this we are still finding that some inspection authorities are yet demanding that all wires be broken by switches, the neutral as well as the live legs. Also, many contractors are still under the impression that

the requirements are the same now as in 1920.

## Grounding Neutrals and Equipment

Two recent fires of electrical origin occurring within a week of each other in widely separated territories show very forcibly the need of extreme care in obtaining efficient grounding not only of secondary neutrals, but equipment, too.

One fire occurred in an unoccupied bungalow in which the service had been disconnected several months previous. After the fire it was plainly evident that the armor of the flexible armored cable had overheated and that the heat had not developed in the conductors.

This heating had occurred between the house cutout box and the first outlet, at which point the box was fastened to the grounded gas pipe. This was found to be the first ground in the cable system, as at the time the bungalow was built no water pipes were available and the armor of the cable had been

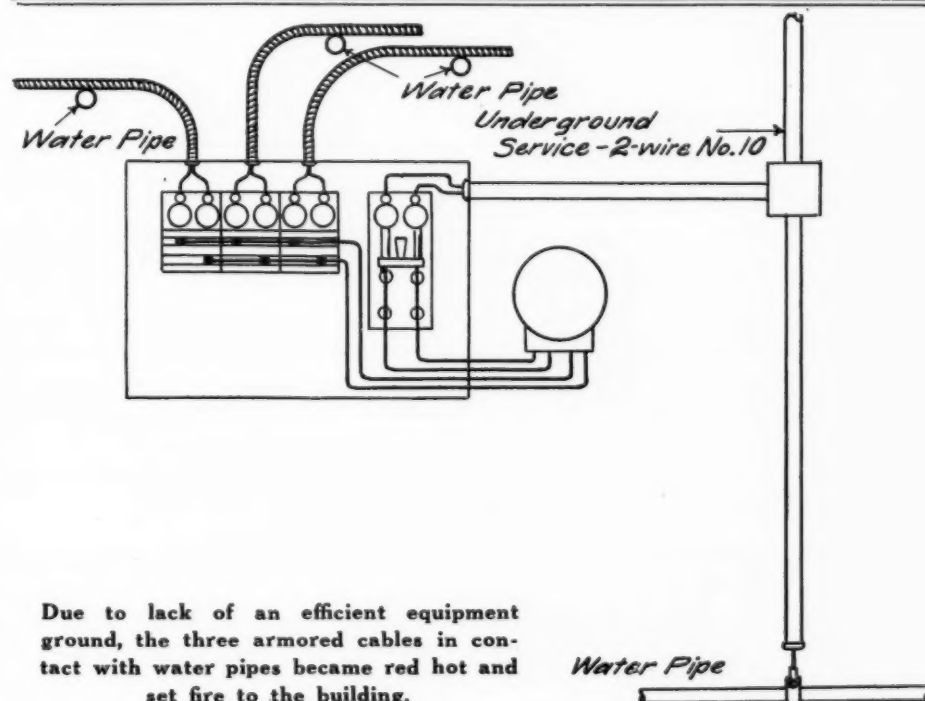
grounded to the gas pipe at a point remote from the meter.

The open meter fuses eliminated the possibility of the disturbance being caused by defective wiring in the house.

Another effect which proved that the armor of the cable and not the conductors was carrying the heavy current was that the rubber and braid on the wires inside of the cutout box and inside of the outlet box and even those parts protected by the cable connectors were still intact and not even discolored after the fire, while the insulation of the run of cable between these boxes was entirely burned away.

Therefore the fire must have been caused by a ground in the service system between the service cap and the service cutout and the fact that the first path to ground which the current found was through the armor of the cable to the gas pipe at the first outlet.

Had an efficient ground on the equipment, i. e. the service conduit, cutout box and cable armor been secured at the



service cutout box this disturbance would have been thrown away from the armor of the cable and on to the service conduit and ground, with the probability that the service wire which was No. 10 would have burned itself clear, or at least the fire would have occurred in the service conduit where it would have been discovered before the fire got under serious headway, instead of occurring inside of a closed building.

The second fire was quite similar. The conditions are shown by the sketch on page 39. The service conduit between the pole and house was buried underground for a distance of 70 or 80 ft. and this was considered as sufficient grounding for the service conduit and interior equipment. The neutral conductor had been grounded independently to the water pipe, but had not been connected to the cable system, so that there was no ground connection on the armor of the cable at the service.

But each of three flexible armored cables running from the main cutout box came in contact with water pipes.

At the time of the fire the armor of each of these three cables was red hot between the box and the point of contact with the water pipe.

Removal of the circuit and service fuses had no effect and disconnecting the service wires at the service did nothing, but as soon as the service wires were chopped off at the pole the armor of the cables cooled off. Subsequent test proved that one of the live legs had come into contact with the service conduit. The assumption is that the current was carried off to ground by the contact of the service conduit with the earth until all the moisture had been dried out around the conduit, and then this current was thrown on to the armor of the cables, which being unable to carry such a load became overheated.

Had the armor been properly grounded at the service the interior runs would have not been subjected to this excess current.

This proves the advisability and necessity of grounding both the neutral conductor and the equipment and also proves that this ground should be at the service location. Grounding at that

place forces the disturbances as far outside of the premises as possible.

#### Watch the Details

Inspect your own job before you leave it!

How many contractors have considered the advisability of the inspection of a job, either by himself or his superintendent, upon its completion, but before leaving it?

It takes but a few minutes to make a check up, but it may save sending a man or team back afterwards.

Items commonly overlooked are ground connections, locknuts left loose, conduit or cable not sufficiently secured, ferrules missing, tape missing, etc.

If the inspector can find it you can.

If the wireman would turn inspector for a short period before leaving the job these defects would be noticed and repaired by him, and think of the expenses for time and carfare saved! Every contractor will admit that having to go back on a job on account of violations eats a big slice out of the profits.

#### Outdoor Runs of Armored Cable and Flexible Conduit

A question recently asked of an inspection group by a contractors' organization was "Why do some inspectors pass flexible armored cable with plain rubber covered conductors installed out-of-doors where exposed to the weather?"

The answer to the question was "They should not." In Rule 505d referring to armored cable we find that "A lead sheath shall be interposed between the outer braid and the steel armor where cable is installed in so-called fireproof buildings in course of construction or in such buildings when completed if the cable will be exposed to moisture or *where the cable is exposed to the weather* or in other damp places."

The question is also raised whether flexible steel conduit may be installed where it is exposed to the weather, and if its use in such locations is permissible, whether the wire installed in this conduit should be lead covered.

Flexible conduit is generally considered to be the equivalent of flexible armored cable with the conductors left out. Therefore the rule quoted above requiring lead covered wire in armored cable which is exposed to the weather might seem to imply that lead covered wire should be used in flexible conduit when installed in similar locations.

A perusal of the 1925 Code shows that "lead covering may be applied to single or multiple conductors" (602f).

Then in rule 402c it is ruled that service wires running underground from overhead supply lines to a building must be lead covered from the building to a point at least 8 feet above ground and suitably protected against mechanical injury—but protected how? By what method? Rigid metallic conduit is generally used in such cases and sometimes fibre duct, but almost never do we see flexible conduit. Why? Does the Code prohibit it? Is it not of sufficient mechanical strength?

Rule 503 deals with "conduit work," but makes no mention of the use of lead covered wires whether in rigid or flexible conduit.

In rule 611, "General Requirements for Use of Conductors," which would be an excellent place for requirements of this kind, we find no mention of lead sheathing.

The next reference to lead covering in the Code is made relative to "Sign Wiring" (rule 3804e) which reads "Wires on outside of sign structure shall be enclosed in approved conduit or metal armor. Where armor is employed an approved lead sheath shall be placed over the wire insulation." A new sentence added to this rule in the 1926 Supplement is omitted as having no bearing on the question of a lead sheath. This is quite plain, but refers only to that portion of the wiring on the sign structure.

From this failure of the Code to specifically demand the lead covering we must assume that plain rubber covered wires may be used in flexible conduit running up to the face of a building to a sign, and any where else for that matter except on a sign structure and in a service run.

## MAKE YOUR RESERVATIONS NOW

27th A. E. I. Convention and Exhibition, St. Louis, August 9-12, 1927



# A Flexible System of Wiring for Office Buildings

ONE of the problems in the design of large office and loft buildings rarely solved to the satisfaction of the owner and tenant is the location of concealed electric lighting outlets. The requirements vary between extremes of high and low intensity lighting, or between floors with no partitions to those in which every bay is subdivided. There are also the difficulties of projecting girders and beams to be met, so that at best the location and number of outlets is a compromise. The most common arrangement is to place

of tenant changes had taken place. The total cost of the changes and extensions to the lighting system during the first year summed up to \$46,000. The piecemeal changes cost nearly three times as much as the original installation. It is evident, therefore, that a building with a more flexible wiring system would have a strong appeal to tenants.

In exposed extensions the largest item of expense is breaking around beams and girders. It seems that the prime consideration in locating outlets should be to place them so that extensions can

A simple method for greatly increasing the flexibility of the wiring and minimize the necessity for extensions in office and loft buildings has been devised by F. W. Erickson, president of The Erickson Engineering Co., electrical contractors of New York. This method amounts simply to running the regular branch circuit conduit as now to an outlet box. From this box are run, fan fashion, more conduits, at the end of which are provided special outlets. Thus, as will be seen in the accompanying diagrams, it is possible by

Fig. 1—Erixolet fitting  
(Below)

Fig. 2—Fitting assembled  
with fixture stem

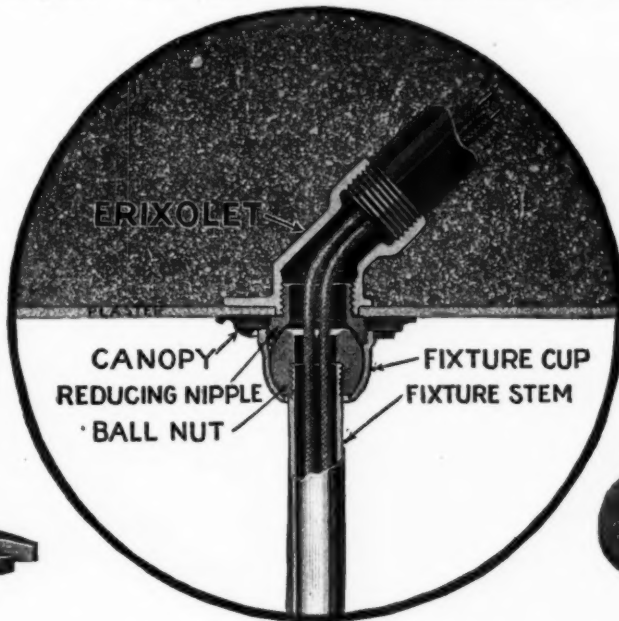


Fig. 3—Cap for fitting



four outlets in a bay, leaving to the tenant the extension or rearrangement.

Not long ago the occupant of a high class office complained to a prominent electrical contractor that the shifting of ten outlets cost him as much as the entire wiring of his country home, and the implication attached to the complaint was that electrical contractors posed rather successfully as wolves in sheep's clothing.

A fourteen-story office building that had comparatively few different tenants was checked for one year after completion. The original cost of the lighting system was \$14,200. During this period of time no unusual changes were made. Most of the original tenants were still present at the end of this interval but on several floors a number

be made short and without breaks, rather than endeavoring to supply a universal lighting arrangement with four outlets. The simple arrangement of putting one outlet in each floor panel between beams would eliminate extensions around beams and would be preferable to the four-outlet arrangement which usually leaves one panel without an outlet.

Providing an outlet in each floor panel would cheapen extensions considerably, but does not reduce them to a minimum. One way to afford greater flexibility would be to provide a larger number of outlets. The first cost would, of course, be higher, but the figures given indicate that the cost after one year would be lower if a larger number of outlets were originally installed.

the degree of completeness of the original installation to provide, at only slight additional expense, for almost any condition that a tenant might demand.

Since only in rare instances would the entire number of the outlets be used at any one time, the system does not readily lend itself to the use of the ordinary outlet box, because of objectional imperfections in the ceiling due to blank covers. To overcome this objection Mr. Erickson devised a new inconspicuous fitting called "Erixolet." It is shown assembled with a fixture stem in Fig. 2. The fitting alone is illustrated in Fig. 1, an enlarged view of the cap is shown in Fig. 3.

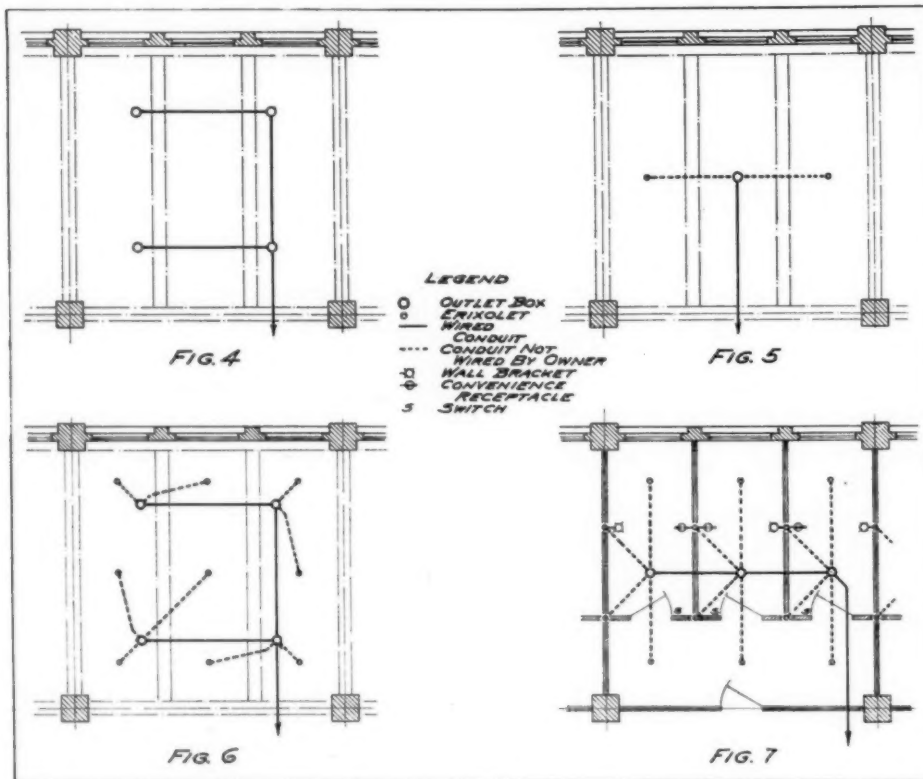
When the Erixolet is not in use the opening in the ceiling is less than an

inch in diameter, and it is closed by the small snap cover, which is painted at the same time as the ceiling.

The fitting consists essentially of a 45-deg. elbow with ears for convenient nailing to wooden forms. It has no splicing chamber. When it is to be connected to a fixture the wire is pulled

ture were wanted in the middle panel. The dotted lines indicate empty conduits.

A more elaborate arrangement is shown in Fig. 6, in which a group of nine Erixolets is superimposed on the conventional four outlet boxes; an arrangement in which there would be lit-



Demonstration of Flexibility of Erixolet System

Fig. 4—Ordinary method. Fig. 5—Two Erixolets. Fig. 6—Seven Erixolets.  
Fig. 7—Twelve Erixolets

in from the outlet box, of which it is a branch, and when it is not in use the conduit to it is empty.

A wide field of opportunity to design flexible outlet arrangements is opened by this system. A primitive layout is shown in Fig. 5 with one outlet box and two Erixolets, providing an outlet in each floor panel, making it unnecessary for extensions to break around beams, as would be the case in Fig. 4 if a fix-

ture temptation for the tenant to run extensions.

A still greater refinement shown in Fig. 7 consists of three 4-inch octagon outlet boxes with a 1/2-in. knockout in each of the eight sides, and of twelve Erixolets. This arrangement is more adaptable to flat ceilings. It permits concealed extensions within the partitions to switches, convenience outlets or brackets.

### Contractors Keep Records of Poor Credit Risks

The members of the North Hudson Electrical Contractors' Association, Union City, N. J., have on file at the secretary's office for ready reference a book in which are listed the names of all general contractors in the territory covered by the club with whom any members have had unsatisfactory financial dealings.

This book is known as the "A. B. C.

Book" ("always be careful") and has been a means of warning members of possible difficulties in jobs they may contemplate bidding on. It is kept up to date by reports of the members, both as to bad pay and to clearing up situations that caused reporting.

At each meeting of the association the secretary calls for "enlistments for the A. B. C. Book." If there are any, the

member walks to the desk of the secretary and writes his own name in the book. On the same line at the right side of the page he inscribes the name of the offending builder and returns to his seat. No other notations are made, but if any of the contractors present are figuring on new work, they go up after the meeting and make a note of the general contractor's name. Then, if interested, they speak to the electrical contractor who recorded the name and learn just what difficulties he has experienced with the offending builder. They can then be careful of their own dealings with him. Entries are made at other times in the office of the secretary.

Sometimes a name may be recorded because of slowness of pay. In that case a line is run through the name of the builder when he has settled his account with the electrical contractor. The line is not run heavily enough, however, to make it impossible to read the builder's name, and if any interested member finds such a name crossed off he knows that the contractor has been lax in settling up his bills on some past occasion and for that reason may bear watching, although he finally paid.

Sometimes information on slow or bad pay comes in other ways. Perhaps a member may hear of a subcontractor in a different field who has been having difficulties with a particular builder. Then if investigation proves that such is the case the member will record the name. If another member seeks information on a man thus recorded, the recording member will tell him that he put down the name because of bad pay in some other field, but that he has no definite information because of any direct transaction.

### A Saw for Fibre Conduit

On a job on which much cutting of fibre conduit had to be done, the Erickson Engineering Company found that considerable time was saved by using a docking saw. This saw was designed for rough fast sawing around docks, ship yards, car shops, etc. It is well adapted for cutting fibre because of its coarse teeth, namely 4 1/2 to the inch. The particular saw noticed had a malleable iron handle, a full-breasted blade, was 18 ga. on the toothed edge, taper ground to 20 ga. on the back for clearance, and was 30 in. in length over all.



# Red Seal



# Progress

© S. E. D.

## Washington's Great Record for First Month

The Electric League of Washington (D. C.) has reported a total of 69 applications for its first month of Red Seal operation, a tribute to the energy displayed by the Washington members in the following out of a carefully developed program.

## New Leagues Receive Licenses

The following leagues have recently been licensed to operate the Red Seal Plan: Electrical League of Richmond, Va., Omaha Electric League, Omaha, Neb., Electrical Development Club of Greater Muskegon, Mich., Alabama Electrical League, Birmingham, the Electric League of Washington, D. C. Applications have been received from the Calumet Electric League, Indiana Harbor, Ind.; Lincoln Electric League, Lincoln, Neb.

## Kansas City Electric Club Publishes Folder

The Kansas City Electric Club has prepared a folder for use in Red Seal promotional efforts. It is designed to aid builders of Red Seal Homes to sell them. When prospective buyers are looking at a Red Seal Home they invariably ask the seller just what this Red Seal means. It is the seller's job to answer the question, and the Kansas City electrical men thought this could be best done by handing the prospect a little folder explaining the idea in detail.

It is the intention of the club to put 50 or more of these folders in each Red Seal Home that is for sale, and they will then be available for the real estate man to hand to his prospects. At the same time, the club believes, the information contained in the folder will help to more thoroughly sell the builder himself on the value of a Red Seal wiring installation.

## League Staff's Cards List Contractor Members

The staff of the Electrical League of Colorado have been provided with busi-

THESE electrical contractors are assisting in the support of the League's advisory service. They are specialists in making RED SEAL wiring installations.

Bolibaugh Elec. Co.	South 9366-J
Byrne Electric Co.	York 1414
Denver Electrical Co.	Main 1986
Edwards Electric Co.	Main 4498
Fischer, J. Electric Co.	Main 2188
Graveline Electric Co.	South 8722
Guscott, Wm. A. J.	Main 1800
Headrick Electric Co.	South 1740
Kaffer-Chapman El. Co.	Main 2252
Lewis, James	Sunset 1443-J
Milzer Electric Co.	Main 1217
Queen City Elec. Co.	Main 7807
Reid, H. G.	Main 2303
Schockett Electric Co.	Main 8229
Scott Bros. Elec. Co.	Main 1548
Shannon, Chas. N. & Co.	Main 2691
Silver State Elec. Co.	Main 1598
Sturgeon Electric Co.	Champa 1839
West Denver Elec. Co.	South 310
West, George B.	South 2386
Williams & Rose El. Co.	Main 1538

ness cards carrying on the reverse side a list of all the contractor-dealer members of the organization who are specialists in Red Seal installations. This innovation was adopted to provide in-

stant suggestions of contractor names if requested by architects or builders with whom a staff man may be consulting. The cut shows one of these cards.

## Continued Progress in Chicago

In Chicago and the territory of the affiliated leagues progress is being made on Red Seal. One builder is Red Seal wiring 17 out of a group of 58 homes, and another prominent builder in the North Shore district has agreed to wire 500 homes in accordance with Red Seal specifications.

## Cooperation of Architects in Alabama

A meeting of the Alabama Electrical League, Birmingham, which was recently granted a Red Seal license, with the local architects' association was held recently to enlist the cooperation of the architects in furthering the league's Red Seal activities. The Birmingham electrical men have set a goal of 200 homes for 1927, and nearly all the leading building firms in the city have promised to lend their aid to furthering the work.

## Some Leagues Modifying the Specifications

SEVERAL leagues have requested permission to modify somewhat the specifications for the granting of the Red Seal. Most of the changes have been brought about by changing local conditions and do not alter the completeness of the wiring installation in any appreciable degree.

In California a local code revision makes necessary a change in the requirements of the electric range service. A convenience outlet is now called for in the reception hall of a home if the hall contains 50 sq. ft. or more. In bedrooms that are used as servants' quarters a convenience outlet may be omitted, and also in baths which already have installed wall heaters or which are immediately next to a dress-

ing room in which one has been installed.

In Denver the coal room or bin must now have a wall or ceiling light. There was also a slight change in the service requirements due to local conditions.

A change has been made in Toledo which requires a convenience outlet to be placed on a "roofed" porch only. In the bathroom it is now permissible to use one wall light instead of two, but it must be controlled from a wall switch. Modification has also been made in the switching arrangement in the living room. The laundry may now have one convenience outlet instead of two, and the mantel in the living room may have one duplex on it or a pair of wall brackets, one on each side.

# *The Electragist*

Official Journal of the  
Association of Electragists—International

S. B. WILLIAMS  
Editor

HARRY J. WALSH  
Associate Editor

## Wiring Conference

The Industry Conference on Wiring—the first conference of all branches of the electrical industry to study a definite problem—has made its recommendation: go out and sell.

In other words, the cost of wiring is not holding back the wiring of the American home. Lack of sales effort is the real cause. The public has been sold brass pipe, copper gutters, brick, etc., etc.—but adequate wiring? It has been left to the public to decide what to spend.

The industry did a wonderful job in selling the idea of using electricity but it stopped there. While there were thousands and thousands of unwired homes it seemed sufficient just to get service into the home. Now the homes of the country are wired and we find ourselves all geared up to work and no work. The central stations must have an ever-increasing load from residences, the manufacturer and jobber must fill the gap caused by the falling off in number of unwired houses, the contractor must find work.

There will always be a certain amount of new construction, some years more and some years less. In the past individuals may have felt slumps but not the industry generally because old house work has filled the valley in the wiring and wiring supplies business. Rewiring must take its place from now on.

To get the rewiring business the electrical industry must organize as a unit, forget any petty differences and understand that the speed with which we go forward depends on how well we pull together in the same direction. The public must be sold.

It will not be necessary to put on intensive campaigns at low prices to bring in this business. The same kind of education that worked for brass pipe, for paint, etc., will work for electric wiring. The public thinking doesn't start off in high gear. It takes time once it does start to gather momentum. We, therefore, must not be impatient and expect the demand to break out in a flood with the first publicity.

The electrical industry must have the patience to plan a campaign of public education to last over a period of years.

The wiring conference report recommends that the industry get together to formulate some such plan. It is a constructive proposal. The electrical industry which has been so progressive in its engineering, and in the manner in which it has electrified industry, must now put its com-

bined forces into action to properly and adequately electrify the home.

## Between the Millstones

Increasing rent, higher wages for clerks, decreasing list prices of electrical appliances and consequent smaller dollars-and-cents margin—what is the natural result?

A few years ago list prices were higher, costs were lower and spread greater. Today there is more competition, and while there is also more total business—enough additional to more than offset the new types of competition—there will never be enough business to offset time-payment terms by the utilities that other merchants cannot meet. Is it to be wondered at that the contractor-dealers have not been able to increase their business sufficient to counteract the growing overhead and decreasing margin?

Non-electrical dealers have taken on electrical lines to absorb some of their growing overhead, but neither they nor the contractor-dealers will be able long to survive the combination of (1) continued restriction of the market due to liberality of terms by central stations and (2) constriction of opportunity for profit due to increasing overhead and decreasing dollars-and-cents margin.

## Red Seal Progress

Statistics giving the number of homes that have been wired to Red Seal specifications are bound to be disappointing because so few cities are pushing the plan and because the number of new houses being built is decreasing. By far a better method is now being employed by certain of the Red Seal cities—namely, that of showing the percentage of new houses for which building permits have been granted that have had Red Seal wiring specified.

It is refreshing, for instance, to read that 50 percent of the new residential buildings for which permits have been granted in Toronto will be Red Seal wired, 25 percent in Rochester and 10 percent in Kansas City. If other cities kept their records in a similar fashion the result would probably be much the same.

When every other new house, as in Toronto, and every fourth house, as in Rochester, are adequately wired we are making progress. At that rate it won't be long before virtually all new houses will be adequately wired.

Then to bring the already wired home up to Red Seal standard.



## The Use of Estimating

When a contractor estimates a job he shouldn't estimate the price, but the cost. The estimate tells him how much it is going to cost him to do that job. The price is what he tells the customer he will do the job for.

Estimating, in other words, is for the contractor. It is a tool of his business. He can use it or not just as he pleases.

The use of estimating may or may not affect the price the customer gets. If the contractor feels that in spite of his estimated cost the price cannot be raised he will at least have an incentive to find more economical and efficient ways of doing his work. The chances are, however, that where the prices should be higher he will find that an estimate will give him the courage that he formerly lacked to sell the job.

It takes time to prepare an estimate properly. No one will deny that. But what does time mean to a contractor if it doesn't mean money? Therefore, we ask, which is better, to use an hour or two at a cost of perhaps two to three dollars to figure a hundred and fifty dollar job, or to take the job and actually lose money?

## Look First

Men who are accustomed to doing old house work know that the safest course is always to look the house over before giving a figure in order to find out whether or not there are any little construction peculiarities. In the rewiring work that is coming, all contractors are urged never to give a price over the telephone. Go out to the premises and inspect before saying how much the work will cost.

One contractor was recently given some work in rewiring a number of attached houses owned by one person. The estimate was based on customary plaster partitions. In this particular case they happened to be of brick.

An examination of the premises would have saved this contractor a nice little sum of money. It is only one instance but it could be multiplied by hundreds.

There was plenty of room for mistakes in wiring old houses. There will be just as many and a few more besides in the rewiring of inadequately wired homes, because there is the present wiring to consider. If that, too, is unknown to the contractor he is guessing in the dark.

## The Canadian Market

There have appeared recently in some of the English electrical journals a number of editorials protesting against the widespread use of Underwriters' Laboratories' standards in Canada, claiming that it was resulting in a preference for American-made over British-made electrical products.

It is a natural impulse for British manufacturers to expect a greater share of the Canadian electrical market than goes over the border to the United States. On the other hand, it is more natural that Americans, those in Canada and those in the States, have similar living conditions.

We, on this side of the Atlantic, have built certain

standards of installation and wiring materials which are higher than those in England. Our conditions over here are different. Our use of electricity over here is much greater than it is in England.

It is not possible to set up an imaginary line, separating the Dominion from the United States, and say that people will live differently on the two sides. It is just as impossible to set up different standards for wiring either of adequacy, ruggedness or character.

The use of Underwriters' Laboratories' standards in Canada is not any domination of the Canadian market by manufacturers on this side of the border, but is rather the expression of the thinking of Canadian electrical and fire prevention men. British-made goods would find equal, if not greater, favor in Canada if their designs were equivalent to the demands of the Canadian market.

The Canadians have no desire to permit lower standards of wiring or materials in the Dominion. Provincial authorities, manufacturers, inspectors, utilities, contractors—all have a pride in keeping the standard in Canada on a high plane.

British-made goods conform to the home market, which does not have such high requirements. Their standard lines will not fit on this side of the water.

Canada has established her standards. The way to enter the Canadian market is not by attempting to have these standards set aside or modified but rather to study the demands of the Canadian market and try to meet those demands with products which are in accordance with the standards set up in that market.

The Canadians set up their own standards and if those standards happen to coincide with those of the United States and they happen to be higher than the British standards, then the evidence would appear to be conclusive that the Canadians want the higher standards.

## The Lesser Evil

It's an odd type of philosophy which suggests that where a bad practice exists it is a good principle to try to substitute a practice not quite so bad. Where a bad practice can be eliminated by education it is very wrong to suggest the substitution of lesser evil.

The new type of convenience outlets without boxes, which are surface wired with flexible cord and without protection, a number of which are strung on one length of cord and served from a legitimate outlet, are not in line with good practice.

If the unprotected surface-wired outlets are used we merely have another, possibly less dangerous, form of wiring installed by the layman. It is sold as safer and better wiring than flexible cord and on the strength of that it puts off just so much longer the permanent wiring.

If contractors push the sale of the unprotected surface outlet they merely postpone the sale of permanent wiring. Contractors can be reasonably certain that when a wiring material with national distribution has not received the approval of Underwriters' Laboratories, that it is lacking in certain qualifications which make for safe wiring.

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Bridgeport (C) .....	L. E. Finch	529 Newfield Bldg.	Utica (C) .....	W. C. Balda	228 Genesee Street
<b>DIST. OF COLUMBIA</b>			Westchester Co. (C) .....	Jack Lalley	14 Mnr. Hae. Sq., Yonkers
Washington (L) .....	P. A. Davis	1328 Eye St., N. W.	Yonkers (C) .....	Louis Mayer	485 South Broadway
<b>FLORIDA</b>			<b>OHIO</b>		
Bradentown (C) .....	W. S. Stewart	W. & S. Elec. Co.	Akron (C) .....	E. C. Rishel	540 East Avenue
Daytona Beach (C) .....	C. Leotah Benson	324½ S. Beach St.	Canton (C) .....	H. S. Hastings	301 New Vickery Bldg.
Deland (C) .....	C. W. Allcorn	132 No. Florida St.	Cincinnati (C) .....	J. F. Riehle	1642 Cedar Ave.
Fort Myers (C) .....	P. K. Weatherly	Thompson-Weatherly Co.	Cleveland (C) .....	F. T. Manahan	Chester Twelfth Bldg.
Indian Riv. Dist. (C) .....	I. O. Page	Vero Beach	Columbus (L) .....	O. A. Robins	1242 Oak Street
Jacksonville (C) .....	W. A. Harper	22 Laura St.	Toledo (C) .....	Fred C. Dunn	Builders' Exchange
Miami (C) .....	E. A. Robinson	118 N. W. First Ave.	Dayton (C) .....	Clarence Carey	1107 South Brown St.
Orlando (C) .....	Solon M. Lantz	833 E. Concord	Massillon (C) .....	F. D. Mossop	c-o Mesco Electric Co.
St. Petersburg (C) .....	Gardiner Blackman	P. O. Box 992	Northern Ohio (C) .....	R. A. Wentz	Elyria
Tampa (C) .....	P. F. Lyons	73 Walton St.	<b>OKLAHOMA</b>		
<b>GEORGIA</b>			Pawhuska .....	C. G. Sego	Pawhuska
Atlanta (C) .....	B. K. Laney	Byck Electric Co.	<b>OREGON</b>		
Savannah (L) .....	Sylvan M. Byck		Portland (C) .....	J. R. Tomlinson	51 Union Ave. N.
<b>ILLINOIS</b>			<b>PENNSYLVANIA</b>		
Chicago			Altoona (C) .....	Walter Bracken	Leechburg
Electrical Contractors' Association	J. W. Collins	160 No. LaSalle St.	Allegheny Valley .....	E. G. Jackson	12 West Third Street
Master Elec. Contractors' Association	F. J. Boyle	304 S. Halsted St.	Du Bois (C) .....	C. E. Blakeslee	11th and French Sts.
Decatur (C) .....	Earl Weatherford	114 East William St.	Erie (C) .....	R. D. Goff	1605 N. Third Street
Granite City (C) .....	William W. Huxel	1418 Niedringhaus Ave.	Lehigh Valley (C) .....	A. W. Hill	Bethlehem
Peoria (C) .....	L. B. Van Nuys	238 So. Jefferson St.	Philadelphia (C) .....	M. G. Sellers	1202 Locust Street
Rockford (C) .....	Donald Johnson	106 North Second St.	Pittsburgh (C) .....	D. A. Fleming	518 Empire Bldg.
Springfield (C) .....	A. D. Birnbaum	916 West Cook St.	Wilkes-Barre (L) .....	Ambrose Saricks	25 No. Main Street
Wheaton (C) .....	E. C. Krage	133 West Front St.	<b>RHODE ISLAND</b>		
<b>INDIANA</b>			Providence (C) .....	H. E. Batman	36 Exchange Place
Lake County (C) .....	A. R. Irwin	3461 Mich'n Av., Ind. Har.	<b>SOUTH CAROLINA</b>		
Indianapolis (L) .....	A. W. Krue	2405 E. Tenth St.	Charleston (L) .....	J. P. Connolly	141 Meeting Street
Michigan City (C) .....	Walter A. Sassodeck	913 Franklin St.	<b>SOUTH DAKOTA</b>		
Muncie (C) .....	Harry McCullough	113 W. Howard St.	Sioux Falls .....	H. W. Claus	326 S. Phillips Ave.
South Bend (C) .....	R. A. Frink	1338 Howard St.	<b>TENNESSEE</b>		
Terre Haute (C) .....	C. N. Chess	523 Ohio St.	Chattanooga (L) .....	P. W. Curtis	725 Walnut Street
<b>IOWA</b>			Knoxville (L) .....	Jerry G. Cason	303 West Church St.
Cedar Rapids (C) .....	H. E. Neff	94 First Ave., West	Memphis (L) .....	J. J. Brennan	12-16 So. Second St.
Davenport (C) .....	Louis F. Cory	510 Brady St.	Nashville (C) .....	J. T. Shannon	c-o Electric Equip. Co.
Des Moines (C) .....	R. C. Trembath	Bankers' Trust Bldg.	<b>TEXAS</b>		
Fort Dodge (C) .....	J. A. Paul	16 So. Twelfth St.	Beaumont (C) .....	J. A. Solleder	Houston & Bolivar Sta.
Sioux City (C) .....	E. A. Arzt	211 Fifth St.	Dallas (C) .....	P. B. Seastrunk	2032 Commerce St.
Waterloo (C) .....	R. A. Cole	Cole Bros. Elec. Co.	Houston (C) .....	J. W. Read	715 Capitol Avenue
<b>KANSAS</b>			<b>UTAH</b>		
Salina (C) .....	C. G. Loomis	814 Cedar St.	Ogden .....	B. Kristofferson	2249 Washington Ave.
Wichita (C) .....	P. W. Agrelus	Wichita	Salt Lake City (C) .....	C. Louis Collins	215 Kearns Bldg.
<b>KENTUCKY</b>			<b>VIRGINIA</b>		
Lexington (C) .....	J. H. Brock	235 East Main St.	Lynchburg (C) .....	J. L. Fennell	c-o Fennell & App
Louisville (C) .....	C. L. W. Daubert	921 South Third St.	Norfolk (L) .....	A. W. Cornick	200 Plum St.
Paducah (L) .....	K. H. Knapp	c/o Paducah Electric Co.	Richmond (C) .....	E. M. Andrews	15 N. Twelfth Street
<b>LOUISIANA</b>			<b>WASHINGTON</b>		
New Orleans (C) .....	I. G. Marks	406 Mar. Bk. Bldg.	Seattle (L) .....	P. L. Hoadley	Seaboard Building
Shreveport (C) .....	R. L. Norton	620 Marshall St.	Spokane (C) .....	William Stack	W. 1121 Cleveland St.
<b>MARYLAND</b>			<b>WEST VIRGINIA</b>		
Baltimore (C) .....	A. P. Peterson	515 Cathedral St.	Wheeling .....	Peter J. Erb	1414 Eoff St.
<b>MASSACHUSETTS</b>			<b>WISCONSIN</b>		
Lowell (C) .....	George A. Ryan	79 Middle St.	Green Bay (C) .....	V. E. Grebel	531 S. Broadway
Haverhill (C) .....	H. W. Porter	14 West St.	Madison (C) .....	L. A. Ring	2017 Winnebago St.
Malden (Medford, Everett and Melrose) (C) ..	H. J. Walton	c/o Malden Electric Co.	Milwaukee (C) .....	E. H. Herzberg	1604 Wells Street
Springfield (C) .....	C. S. Foster	220 Dwight St.	Racine (C) .....	Joseph J. Small	1910 Linden Ave.
Worcester (L) .....	John W. Coghlin	259 Main St.	<b>CANADA</b>		
<b>MICHIGAN</b>			Montreal (C) .....	George C. L. Brassart	674 Girouard Ave.
Detroit (C) .....	N. J. Biddle	112 Madison Ave.	Toronto (C) .....	J. A. McKay	302 Excelsior Life Bldg.
Grand Rapids (C) .....	T. J. Haven	1118 Wealthy St., S. E.	Vancouver (C) .....	J. C. Reston	579 Howe St.
Kalamazoo .....	E. R. Hummel	1121 Seminary St.	Winnipeg (C) .....	Fred Ball	300 Princess St.
Saginaw (C) .....	E. T. Eastman	209 Brewers Arcade			
<b>MINNESOTA</b>					
Duluth (L) .....	Morris Braden	c-o Minn. Pow'r & Lt. Co.			
Minneapolis (C) .....	W. I. Gray	209 Globe Building			
<b>MISSOURI</b>					
Kansas City (C) .....	Walter C. DeBolt	Wirthman Bldg.			
St. Louis					
Electragists' Ass'n (C)	W. F. Gerstner	120 No. Second St.			
Electric Employers' Association (C) .....	G. L. Camp	Wainwright Bldg.			

(C) designates exclusively Contractor-Dealer organization.

(L) designates an Electrical League.

# MAY ACTIVITIES

## Illinois Legislature Acts on Electrical Bills

The inspection and registration acts which have been sponsored by the Electric Association of Chicago, and which are being fathered in the legislature by Senator Thurlow G. Essington, have been passed unanimously by the Senate and have been favorably reported on by the House Committee on Municipalities of the Illinois Legislature. They have also passed the first reading in the House and are now up for a second reading. These two acts which have the support of all branches of the electrical industry in Illinois, have been endorsed by the Illinois Electragists, who went on record at a meeting held in April in Peoria as urging its membership to get behind the proposed legislation. Previous state acts had been declared unconstitutional and every city in the state has been without power to enforce inspection. The registration measure calls for a registration of contractors with an annual fee of \$50.

## Colorado State Meeting Most Successful

The second annual state-wide meeting of Colorado electrical men, sponsored and arranged by the Electrical League of Colorado, which was held recently at the Albany Hotel, Denver, was one of the most successful events that has been held under the auspices of the league since its start six years ago. Of the 161 there, 52 were accredited to the contractors division, the largest representation of any group attending. Following the precedent set last year the Denver Electrical Contractors' Association again acted as host to the visitors at a noon-day luncheon.

Both morning and afternoon business sessions were well attended, and a number of interesting talks were given. G. B. Buck spoke on "Opportunities for Commercial Development in the Rocky Mountain Region," L. A. Barley discussed electrical code problems, and round table discussions were led by P. Harry Byrne and E. C. Headrick.

"The State-Wide Electrical Contractors' Association" was the subject of a talk by W. A. J. Guscott. The city electrician of Denver, John Malpiede, discussed the various problems of inspection.

In the evening a banquet and entertainment were given in the ballroom of the hotel.

## A. E. I. and The Electragist in New Quarters

The headquarters office of the Association of Electragists, International, and the advertising and editorial offices of THE ELECTRAGIST have been moved from the sixth floor of 15 West 37th Street, New York City, to the fourteenth floor of the same building. The new quarters occupy the entire length of the building.

The fourteenth floor rises above the line of the surrounding buildings, thus permitting free circulation of air and ample light. The fourteenth floor was originally designed for the studios of a commercial artist, with closely spaced windows its entire length, providing ideal working quarters for every department of the association and the staff of THE ELECTRAGIST.

## Georgia Association Holds Annual Meeting

The eighth annual convention of the Georgia Electrical Association was held in the Henry Grady Hotel, Atlanta, on May 13. A varied program at the business session in the morning, a golf tournament over the course of the East Lake Country Club in the afternoon and a banquet in the ballroom of the hotel in the evening made up the activities of the day.

At the business session P. C. Gilham, president of the Gilham Electric Company, spoke on "The Jobber's Function," Harrison Jones, executive vice-president of the Coca-Cola Company, addressed the members on "Merchan-

dising," and D. J. Finn, of the Edison Lamp Works, gave a talk on lighting.

At the election of officers following the banquet C. F. Ludwig, of Dublin, Ga., was chosen president, for the coming year; T. W. Moore, Atlanta, vice-president, and Jack McDonough, Dublin, secretary-treasurer.

The principal speaker at the banquet was P. S. Arkwright, who paid a tribute to the late Lester L. Shivers, a member of the association whose death occurred on May 9.

## California Electragists Meet at Lebec

The recent meeting of the California Electragists, Southern Division, at Lebec brought out an attendance of 160 and was characterized by several most interesting papers. Chairman Hyde of the estimator's section read a report of the progress of his section during the past 18 months and distributed copies of the Guide for Standard Electrical Specifications, which are printed in full in this issue of THE ELECTRAGIST, starting on page 35. Burt Kramer spoke on electric range development; W. L. Frost, of the Southern California Edison Company, read a paper on "The Need for Constructive Cooperative Work within the Industry"; and C. J. Geisbush read the inaugural address of Clyde Chamblin, who was unavoidably absent. H. F. Ray, of the Pacific States Electric Company, spoke on the economic position of the electrical supply jobbers.

The Electragists won a baseball game from a team representing the manufacturers and jobbers and were awarded a pennant.

## Kalamazoo to Have Electric Home

It was decided at a recent meeting of the Kalamazoo (Mich.) Electric League to hold an electric home exhibit in the near future. The plan provides cooperation with a local builder, whereby a house under construction will be adequately wired and fully equipped with appliances.



## Time and Material Billing Recommendations

The Maryland Division of the Association of Electragists, International, recently made recommendations to its membership covering the billing of customers on time and material work. The recommendations represent the consensus of opinion of the members who attended a meeting of the Better Methods Group of the organization.

The recommendations are:

1. Do not itemize the bill: Merely make a statement of the work done, giving the price as a lump sum. The experience of members who follow this practise is that less than 5 percent come back with a request for an itemized statement.

2. Be prepared to show the customer an itemized bill: Where a customer calls for an itemized statement bring your original records to his office or have him come in to look them over. Leaving this information with him merely gives him the shopping privilege.

3. Why not to send an itemized bill? Remember that after the work is done it is easy for another contractor to say that he could have done it cheaper. Not only that, some jobbers are in the habit of quoting wholesale prices to consumers regardless of the size of order or quantity of material desired.

4. Charge your T. & M. customers a fair price: Do not attempt to make up on your T. & M. customers what you lose on some of your contracts. The chances are that he is a friend of yours, for he gives you the order without asking for the price.

## Fowler Addresses Meeting of Chicago Association

Joseph A. Fowler, Memphis, Tenn., past president of the Association of Electragists, International, was the guest and speaker at the regular quarterly luncheon of the Electric Association of Chicago, held at the Palmer House on May 26.

## New York Independents to Celebrate

The Independent Associated Electrical Contractor-Dealers, Inc., will hold their annual outing on July 17 at Glenwood Landing, Long Island, N. Y.

A. Lincoln Bush is chairman of the entertainment committee.

## N. E. L. A. Convention Program Includes J. A. Fowler

Joseph A. Fowler, past president of the Association of Electragists, International, will address the Atlantic City convention of the National Electric Light Association, which is to be held from June 4 to 10, inclusive, on the subject of "Cooperation for Service." Mr. Fowler's talk will be given on the afternoon of Thursday, June 9, at the general session scheduled to start at 2:30.

## Electragist Editor Speaks at Denver Meeting

S. B. Williams, editor of THE ELECTRAGIST, spoke at the noonday luncheon of the Electrical League in Denver on May 18, and on the following day was the guest of the Denver Electrical Contractors' Association at the organization's dinner meeting which was held at the Cosmopolitan Hotel.

Mr. Williams spoke of the value of coordinated effort in the electrical industry and discussed contractor-dealer problems.

## Cincinnati Plans a Permanent Electrical Exhibit

THE Cincinnati Electric Club has been offered the first floor of a building at the corner of Broadway and New Street, which is to be opened soon as a permanent exhibit of various branches of the building industry, for use as an electrical exhibit. The two upper floors will be occupied by the Associated Building Industries as its headquarters and the other five floors will be devoted to the exposition of everything going into the construction of a building. The entire exhibit will be under the supervision of a joint committee of the building interests and the Cincinnati branch of the American Institute of Architects.

The proposed plan has met with the approval of the board of directors of the Cincinnati Electric Club and dealers in appliances and lighting fixtures, providing sufficient space can be leased to warrant the club taking on the project. The sale of space is now going on and

## Adequate Wiring of Iowa Farms

Through the state college, the Iowa Electragists are about to draw up wiring layouts which will make adequate installations possible for farm buildings. Prof. Paine is now working on plans for a number of typical farm buildings. As soon as they are ready, blueprints will be made and sent out to Electragists over the state with a request that they lay out their idea of a minimum and an adequate installation. These layouts will be studied and analyzed by the officers of the association and a standard recommended. This standard will be used by the state college in its contact with the farmers.

## New Association Secretary in Pittsburgh

On June 2 Fred Rebele, secretary of the Electrical Contractors Association of Pittsburgh, Pa., was succeeded by D. A. Fleming. The latter will act in the capacity of business manager and secretary. Mr. Fleming was formerly a field man of the Association of Electragists, International, being assigned to territory in the Great Lakes states.

gives evidence of being sufficiently large to assure the club's participation in the project. The sale is limited to Blue Emblem members of the Cincinnati Electric Club.

The plans include settings for the display of appliances and lighting fixtures, an industrial lighting exhibit, a commercial lighting exhibit and two large show windows for show window lighting demonstrations. An assembly room is also included, where various groups may meet and where architects and various women's organizations may be invited for lectures and practical demonstrations.

The club announcement states that the exhibit offers to the electrical industry of Cincinnati an opportunity to get its story before the public in an economical manner and at the same time in a way that will be productive of results. A \$10,000 advertising appropriation is contemplated.

## Iowa Electragists Initiate Trade Relations Plan

A PLAN of state-wide cooperation among the four commercial branches of the electrical industry has been initiated by the Iowa Electragists, it was announced by Earl N. Peak, president of the state association, at its annual spring meeting held in Sioux City on May 16 and 17. Representatives of the jobbers, manufacturers and central stations were present and spoke in favor of the plan.

The plan has not been worked out in detail as yet, but it contemplates frequent meetings between the organized branches of the industry to iron out difficulties. Unlike cooperative plans that have at various times started here and there, the Iowa plan has no restrictive features of an unfair nature. The new plan is an effort to put the trade policy of the Association of Electragists in effect in Iowa.

It was felt by the officers of the association that the successful operation of the plan might extend its influence to neighboring states and for that reason Electragists from those states were invited to be present, a number of them accepting the invitation.

### Need for Plan

The convention opened on May 16 with President Peak's address, in which he outlined need for the plan and the work that had been done to date in contacting with the utilities and jobbers. The greater progress has been with the

latter. Among the items that are being discussed with the jobbers are the following:

The purchase of all electrical supplies through electrical jobbers.

Encouragement of the practice of working through contractor-dealers and discouragement of the practice of electrical salesmen working through non-electrical channels.

Granting to contractor-dealers the same prices as any one else for like quantities and quality.

Stabilization of price and standardization of merchandise.

Discouragement of the practice of soliciting business of industrial and individuals by the jobbers.

In beginning this work the state association was insistent that its discussions be held only with executives who could make decisions, and it would not work with salesmen or other subordinates.

H. C. Downing represented the jobbers, and Clarence Macy, president, Iowa Section, N. E. L. A., the power companies. Both pledged themselves to work through their industry for the furtherance of this plan.

In the afternoon an address was made by S. B. Williams, editor of THE ELECTRAGIST, on the subject "What a Co-operative Program Means to the Electric Industry," in which the economic relation of the four branches of the industry was outlined. The remainder of the afternoon was given over to re-

ports from President Peak, Vice-President H. J. Ryan, J. R. Payton, secretary, treasurer, and the chairman of the legislative committee, Robert Honneger.

The second day was taken up with the discussion of trade and legislative matters through the committees in order to work out a program for them to follow.

A banquet was held the first evening by the association, and the delegates were the guests of the Sioux City Electrical League the second evening of the meeting.

### Plans for S. E. D. Reorganization Are Announced

The contemplated reorganization of the Society for Electrical Development, for purposes of coordination and securing the fullest cooperation and representation of various organized industry elements, has been announced following a meeting of the board of directors on May 24.

Changes made in the bylaws provide the procedure for bringing on the board of the society the following: The president, the chairman of the commercial national section, and the managing director of the National Electric Light Association; the president, managing director, and one other representative of the National Electrical Manufacturers Association; the chairman of the executive committee, the managing director, and one other representative of the Electrical Supply Jobbers Association; the president, general manager, and one other representative of the Association of Electragists, International; the chairman, the vice-chairman, and one other representative of the League Council. These are in addition to the other directors.

The directors at this meeting took further action, putting into effect immediately the enlarged plan, by appointing as directors, R. F. Pack, president; J. E. Davidson, chairman commercial national section; Paul S. Clapp, managing director of N. E. L. A.; Gerard Swope, president; A. E. Waller, managing director of N. E. M. A.; Lawrence W. Davis, general manager, A. E. I., and J. E. North, representing the League Council. George E. Cullinan, chairman of the executive committee, E. S. J. A., and C. L. Chamblin, president of the A. E. I., were already directors of the society.



Banquet of the Iowa Electragists, Sioux City, May 16



## New Contractor Association in Connecticut

As a result of a meeting of contractors called some weeks ago by Sherlon T. Baldwin, electrical inspector, designed to create better cooperation between the electrical contractors and inspection department of Milford, Conn., the Milford Electrical Contractors' Association has been formed with eight charter members and the following officers: Ward C. Hunt, president; Roger W. Beers, vice-president; Carleton C. Perry, secretary-treasurer.

According to Inspector Baldwin there has been a great need in Milford for better electrical conditions, and it was to assist in clearing up this situation that Mr. Baldwin asked the contractors to meet with him. Electrical men from New Haven were present at the meeting to explain the advantages of such an organization.

No definite program has been laid out for the new organization, but steps

will soon be taken to prepare a new electrical ordinance and to make provision for licensing contractors.

## Uniform Ordinance Endorsed in California

A uniform electrical ordinance received the endorsement of the California Electrical Inspectors at the annual convention of that organization held recently at Oakland, Cal. The convention was attended by over one hundred delegates and was one of the best from every angle thus far held by that organization. Clyde Chamblin, president of the Association of Electragists, International, was scheduled to give a talk, but was unavoidably absent and his paper was read by H. C. Reid, a member of the association from San Francisco.

Mr. Chamblin urged the inspector to mingle with all branches of the industry and to take more part in their activities.

The new manager, Mr. DeBold, has had considerable experience in association work and comes to the new organization from a national association in the plumbing industry.

## Kansas Electragists Hold Successful Meeting

Contractors from many of the surrounding towns joined with the members of the Kansas Electragists at the meeting of that organization held in Atchison on May 16, which was addressed by Robert C. Hill, field director of the Association of Electragists, International, on "The Cost of Doing Business." City Manager Wells of Atchison welcomed the members to his city, and a representative of the local chamber of commerce greeted the gathering. It was decided to hold the next meeting at Pittsburgh, on November 14.

## New Contractor Association Formed in Kansas City

THE Electrical Trades of Kansas City is the name of a new contractor organization recently formed following a suggestion made some months ago at a joint meeting of the Kansas City Electric Club and the Kansas City Chamber of Commerce by Joseph A. Fowler, who was then president of the Association of Electragists, International.

Fred E. Geis, John T. Costelow and Frank G. Martin started to work on the suggestion of Mr. Fowler, and the first active steps were taken a few weeks ago when a series of conferences was held to which all the contractors and jobbers in the city were invited. The result of these meetings was the organization of the association with Fred E. Geis, of the Fred E. Geis Electric Company, president; John F. Costelow, of the Costelow Electric Company, vice-president, and Frank G. Martin, of the Hutchinson Electric Company, secretary-treasurer. A salaried business manager, W. C. DeBold, has been hired and temporary headquarters are located in the Wirthman Building. After July 1, the new organization will be located in the City Bank Building.

The new association embraces all

electrical contractors regardless of how much or what kind of business they do. Formerly there was an organization in Kansas City of the larger contractors and another of those contractors located outside the downtown business district. This division has been done away with in the present organization.

Forty-six contracting organizations have underwritten a program for 18 months of activity, which is expected to be sufficient time to get things under way along constructive lines. The financial arrangements provide that dues of 2 percent of the productive payroll of the members be paid weekly. No member firm can pay less than \$1.50 per week.

Among the earlier scheduled activities are the fostering of a spirit of close cooperation among the members, education along the line of proper cost estimating, and the setting up of a credit interchange bureau. Meetings are to be held every Tuesday evening.

Many of the members belong to the Association of Electragists and most of them are also members of the Kansas City Electric Club, which lent every possible aid to the formation of the new association.

## Colorado League Issues Roster of Members

The Electrical League of Colorado has prepared for distribution among its membership a roster printed on heavy cardboard, 18 in. by 12 in., which contains all the names of the organization arranged under group headings of contractor-dealers, jobbers, manufacturers and public utilities. It is designed to be hung in the places of business of the members and to serve as a ready reference.

## Fixture Associations Join Forces

Announcement has been made of the consolidation of the Artistic Lighting Equipment Association and the National Association of Lighting Equipment Dealers, thus bringing into one organization all interests directly concerned with the manufacture and distribution of lighting equipment.

G. Fred Laube, Laube Electric Corporation, Rochester, N. Y., former president of the dealers' association, will head the dealers' group in the consolidation.

An educational replacement program is now being developed to broaden the market for fixtures, encourage replacement and awaken in the minds of the public a greater consciousness of what constitutes good lighting equipment.

The new campaign will be presented at the convention of the association at Atlantic City this month.

The Exterior Lighting Equipment and Lantern Manufacturers' Group of the association at a recent meeting elected George J. Klein, president of the Novelty Lighting Corporation, Cleveland, Ohio, permanent chairman. It was agreed at the meeting that the group would cooperate in a publicity campaign to tell the story of lanterns and exterior lighting equipment to the public in a way that will be helpful both to the home owner and the fixture dealer. This will include the preparation of direct mail literature for the use of manufacturers, jobbers and dealers.

### Geisbush Is Named Manager of California Electragists

C. J. Geisbush has been appointed state manager of the California Electragists by the executive committee of that organization. His appointment is designed to coordinate more closely the work of the northern and southern divisions of the association. Mr. Geisbush has been executive secretary of the southern district since its inception. Earl Browne, general manager of the San Francisco Electrical Contractors and Dealers Association, the same time was named office manager of the state association.

### N. Y. Association Meets This Month

The New York State Association of Electrical Contractors and Dealers will hold its twenty-eighth annual meeting on June 13 and 14 at the Syracuse Hotel, Syracuse, N. Y. The tentative program includes addresses by Mayor Charles G. Hanna of Syracuse, W. W. Vaughan, chief inspector, New York Fire Insurance Rating Organization; Joseph P. Haley, vice-president of the Adirondack Light and Power Company; Simon Rasch, New York attorney, and Laurence W. Davis, general manager of the Association of Electragists, International, who will take as his subject "The Road to the Market."

Several entertainment features have been planned, among them being the annual dinner dance in the ballroom of the hotel and the spring outing of the Electrical League of Syracuse at Three

Rivers, at which those at the convention will be guests. Harvey N. Smith is chairman of the convention committee.

### Camp Cooperation Opens on August 29

The sixth conference of electrical leagues will be held at Association Island, Henderson Harbor, N. Y., August 29 to 31, inclusive.

A special committee is being selected to prepare the business program, which will cover all phases of league operations and will include reports of accomplishments and plans for intensifying local market development work. During the conference, there will be held meetings of the League Council and the special committees appointed to advise on the operation of the Red Seal Plan.

For further information about Camp Cooperation, address The Society for Electrical Development, Inc., 420 Lexington Avenue, New York.

### Fried Aids in Relief to Flood Victims

J. M. Fried, a member of the Association of Electragists, of Vicksburg, is playing an active part in the distribution of food to the flood sufferers in Mississippi. When the flood made its appearance in his section, he was one of the first to assist in the organization of systematic relief. There are thousands of sufferers relying on the organization at Vicksburg for their daily food, and the efforts of Mr. Fried and his co-workers have done much to alleviate suffering.

## OBITUARIES

### Anton T. Kliegl

Anton T. Kliegl, president of Kliegl Bros. Universal Electric Stage Lighting Company, Inc., 321 West 50th Street, New York City, died suddenly in Bad Kissingen, Germany, his birthplace, on May 19 while on a business trip. He leaves a widow, Mrs. Leopoldine Kliegl, and no children.

In 1892 he came to America. His first position here was that of electrician and mechanic with a traveling show. He later became associated with Mr. Myerhofer, from Vienna, who established the Myerhofer Electric Stage

Lighting Company. Mr. Kliegl later bought out the interests of Mr. Myerhofer and started a new business with a new company, but this was soon ended. He was then joined by his brother, John H. Kliegl, in the establishment of the business of the Universal Electric Stage Lighting Company, Inc., in 1896.

### Lester L. Shivers

Lester L. Shivers, president of the Carter Electric Company, General Electric Company distributor for Georgia, died in Atlanta May 9 following an operation at the Wesley Memorial Hospital. Mr. Shivers joined the Carter Electric Company seventeen years ago as salesman and soon after was made vice president and general manager. In 1922 he bought the controlling interest in the company and became president, in which capacity he remained until his death, though earlier in this year the General Electric Company took over the control of the Carter Electric Company. Mr. Shivers was 51 years of age.

### News Notes Concerning Contractor-Dealers

Modern Electric Company, 254 Atlantic Avenue, Stamford, Conn., recently suffered a loss of \$20,000 damage to fixtures and stock in a fire which gutted its store.

Harry J. Burke and Walter L. Thomas, who were employed for the past few years by the Peoples Gas & Electric Company, have opened an electrical business in Mason City, Iowa. They will specialize in contracting and repair work.

Byck Electric Company, 141 Bull Street, Savannah, Ga., has just issued a 50-page catalog of lighting fixtures, appliances and supplies. It is an especially attractive booklet and is well illustrated throughout.

Reorganization of the Barker Electric Company, Jackson, Mich., has been completed, and C. D. Barber was elected president and general manager. A. F. Miller was chosen vice-president and W. G. Coon is the new treasurer. The company is now occupying its new quarters at 616 Oak Street, where new



motor-winding equipment has been installed.

H. W. Stafford has organized an electrical contracting business at 1025 Mason Street, Utica, N. Y. He has been a wireman for several years.

Crow Electric Company, 203 East Main Street, El Dorado, Ark., has been sold to E. M. Powell and O. C. Potter, and the name has been changed to the Electric Shop. Both new owners have had experience in the electrical field, having been in the employ of the Robbins Electric Company and the Moore Electrical and Engineering Company.

The new home of the Friedman Electric Company, Belleville, Ill., which was recently completed at 328 Main Street, has been opened. The layout of the new establishment is especially

attractive and in addition to the main sales room on the ground floor there are separate display rooms, glass enclosed, on the left wall of the sales room, each room being completely furnished as the room in a home, for display of lighting fixtures.

Oscar H. Allen, Brockton, Mass., electrical contractor, has opened a store at 55 East Elm Street, that city, where he will carry a general line of appliances and fixtures. He has been engaged in contracting since 1917.

W. T. Gosnell, Onalaska, Wis., has opened an electrical shop on Main Street, that place, which is the first strictly electrical store there. In addition to the usual line of appliances that will be carried, contracting and repair work will be featured by the new concern.

H. R. Black, electrical contractor of Greencastle, Pa., has opened a branch on East Lincoln Way, McConnellsburg, Pa. He has been specializing in house wiring.

Watts Electric Company, Seattle, Wash., has moved to new and larger quarters at 608 Second Avenue, where added facilities will permit the enlarging of the company's contracting business.

The electrical store and business of B. W. Bouck & Company, Cobleskill, N. Y., has been sold to Theodore G. Rew of that place. Mr. Bouck has entered the employ of an electrical supply jobber of Albany, having been made manager of the branch in Oneonta.

Perry Electric Shop, Perry, Iowa, has moved to larger quarters on Willis Avenue, that city. Alterations are to be made in the new location.

I. Mendenhall has opened an electrical store in the First National Bank Building, Terra Bella, Cal., as a branch of his store in Los Angeles. The new store will be in charge of F. M. Whitney, an electrical engineer. The name of the new enterprise will be the Electrical Engineering & Supply Company. Contracting and motor winding will be featured.

Bachmann Electric Company, Fond du Lac, Wis., has opened a branch in Mayville, Wis., which is in charge of Hugo Grossmann. The new store will carry on a contracting business, and will feature a line of motors, appliances, lighting fixtures and ranges.

Quinte Electricians, electrical contractors of Belleville, Ont., Canada, have taken larger quarters after a steady growth of business since the start of the enterprise two years ago. The new location will be in the Pringle Building, and will afford ample space for the display and stocking of the appliances and fixtures which the firm carries.

Williamson Brothers, Grove City, Pa., have opened a branch store in Sharon, Pa., on the Anderson business block.

## New Electragists

The following contractor-dealers have made application and been accepted into the A. E. I. since the publication of the last list in the May issue:

### ALABAMA

#### Birmingham:

Smith-Dahl, Inc.

### CALIFORNIA

#### Arroyo Grande:

Arroyo Grande Plbg. & Elec. Shop

#### Burlingame:

Larke Appliance Co.

#### Corning:

Corning Elec. Co.

#### Gilroy:

Hollenback Electric

#### Morro Bay:

R. A. Creath

### CONNECTICUT

#### Milford:

Ware C. Hunt  
The Electric Shop

#### Waterbury:

C. B. Johnson Elec. Shop, Inc.

#### West Haven:

A. A. MacPherson Co.

### ILLINOIS

#### Champaign:

Craw & Hardyman  
Hughes-Krabbe Co.  
Standard Elec. Co., Inc.

#### Urbana:

Central Elec. Shop

### INDIANA

#### Fort Wayne:

Art H. Welklin

### KENTUCKY

#### Lexington:

Brock Elec. Engrg. Co.

#### Louisville:

Wm. C. Krauth Elec. Co.

### MARYLAND

#### Baltimore:

Edw. Bauernschmidt

### MASSACHUSETTS

#### Springfield:

Carroll Elec. Co., Inc.

### MICHIGAN

#### Detroit:

Edmund J. Davis

### NEW JERSEY

#### Jersey City:

Walter J. Coleman  
John C. Morris

#### Newark:

The Badgley Curtis Co., Inc.  
Baker Bros.

Beach Elec. Co., Inc.  
Lightning Elec. Co.

### NEW YORK

#### New York City:

The C-M Elec. Co.

### OHIO

#### Akron:

Adolfson & Chandler

#### Toledo:

Arnold E. DeFrance

### PENNSYLVANIA

#### Pittsburgh:

Beattie-Brady Co.  
Craig Elec. Co.  
G. L. Craig Elec. Co.  
Diamond Elec. Co.  
Hess & Barton Elec. Co.  
Morganstern Elec. Co.  
Standard Elec. Constr. Co.  
Pittsburgh Elec. & Constr. Co.

#### Wilkesburg:

Rodden Elec. Co.

### CANADA

#### Toronto, Ont.

Armstrong & Coupland

### JAPAN

#### Kawasaki, Near Tokyo:

Tokyo Elec. Co., Ltd.

## News of the Manufacturers

### Armored Attachment Plugs

The Arrow Electric Company, Hartford, Conn., announces the introduction to the trade of a line of armored attachment plugs, known as No. 8,290 and No. 8,390. The com-



position cap on these plugs is covered with steel and is ribbed so as to offset the effect of any blows and protect the composition. No. 8,290, shown at the left, is for pony base, while the other is designed for standard base.

### Spotlight

Kliegl Brothers, 321 West 50th Street, New York City, have brought out a spotlight which has arranged on it a centralized control system in the back. Arc, color frames, iris shutter, curtain shutter and direction of light beam are all controlled from the back of the spotlight and are an integral part of the



lamp itself. The design is said to provide great flexibility, convenience of operation and a wide range of adaptations for the requirements of the modern theatre. The illustration on the left shows the light with resistance mounted on the stand and the one on the right shows it without resistance or cable.

### Fan Wall Box

The Emerson Electric Manufacturing Company, 2012 Washington Avenue, St. Louis, Mo., has placed on the market a combination wall box with louvre designed for use with its 12-in. ventilating fan. The new wall box is of steel and is designed for permanent installations in residence kitchens. The box consists of two square steel shells, one telescoping into the other, with steel mouldings to give a finished effect. The outer shell is equipped with a leaf shutter, closing automatically when the fan is not running. The inner shell contains provision for mounting the fan inside it and has a detachable grille of expanded metal at the end exposed to the room. The box is designed for use with walls

of varying thicknesses, the telescoping arrangement making this possible. On walls thicker than  $1\frac{3}{4}$  in. it can be used without telescoping, four threaded rods being provided to hold the shells together.

### Art Plates

The Hart & Hegeman Manufacturing Company, Hartford, Conn., has placed on the market a line of art plates for tumbler switches, one to four gangs; push switches, one to four gangs, and single and duplex con-



venience outlets. They are hand etched on .060 brass and come in three designs, and four finishes, bronze, statuary bronze, antique brass and Butler's silver. With these combinations, according to the manufacturer, it is possible to make the plates on the switches and receptacles in a home or office match the interior decorations or fittings. The illustration shows the "Southwick" design on a plate for a tumbler switch.

### Bell Transformer

Jefferson Electric Manufacturing Company, 501 South Green Street, Chicago, has introduced a bell-ringing transformer designed to fit  $3\frac{1}{4}$ -in. and 4-in. outlet boxes and supplied



with an outlet for a drop cord. The installation of this transformer is said to require only the splicing of two wires and the tightening of two screws. It is designed for residences and small apartment houses, and the manufacturer states that it will operate electric bells, door openers, buzzers, etc. Its size is  $2\frac{1}{4}$  in. by  $2\frac{3}{4}$  in. by  $2\frac{1}{4}$  in.

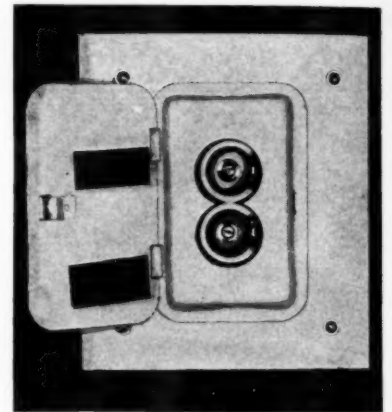
### Floodlight Projector

Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., has brought out a floodlight projector for applications where long focal distances are necessary. The new light has a 24-in. parabolic chromium-

plated brass reflector mounted in a cast aluminum alloy frame with a spun sheet aluminum back. A heat-resisting glass lens is held in a door which opens from the front, swinging sideways, making it a simple matter to clean the reflector and renew lamps. Simplicity of adjustment and focusing are claimed for the new light, which comes with either narrow or wide beam projector and with either a plain or spread lens.

### Residence Panelboards

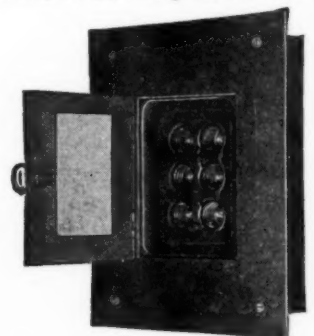
Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., has recently placed on the market two types of residence panelboards, known as the residence and junior residence panels. The residence type is manufactured for stock up to 12 circuits with either two fuses in each branch circuit



or one fuse with solid neutral connection. The junior panel is stocked up to six circuits, and has for each branch circuit a single fuse and solid neutral connection. It is furnished in either black or white. Both types are said to be attractive in appearance and sturdy in construction, and provide for safety in use. The junior panel is illustrated.

### Panel

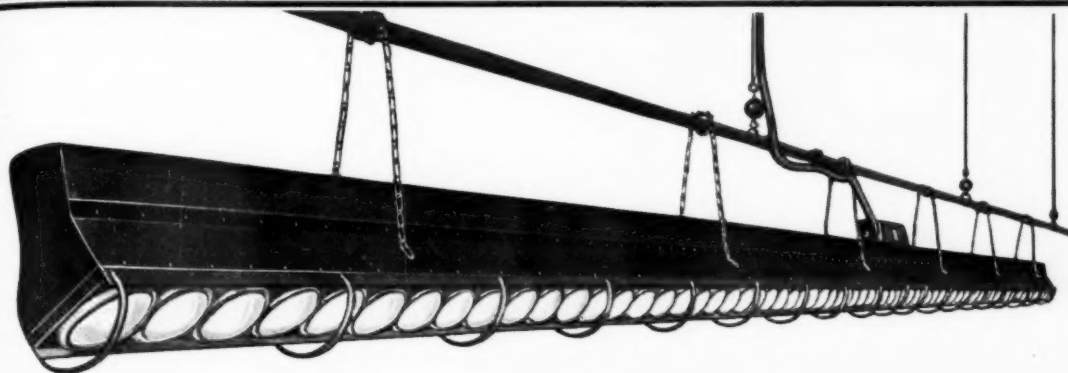
Federal Steel Products Company, 2 Avenue L, Newark, N. J., has placed on the market



a line of panels from 2 to 12 circuits in flush and surface type, with and without arrangement for toggle switches. The standard finish is black, but they are also furnished in several other colors. The panels are for polarized wiring and can be used on either two or three-wire mains.



# MAJOR BORDERLIGHTS



The Major B-200 Borderlight—the highest developed overhead stage lighting unit of its type.

## Let's talk about that theatre job—

ELECTRICAL contractors on theatre jobs need the Major better built products to do this kind of work in a professional manner. Theatre wiring as known to the experienced, is decidedly different and the engineering and estimating service of the Major organization can be a great factor to you if you are interested in this field.

A full line, including stage pockets, procenium strips, floodlights, covelights, stage switchboards—all designed and built under supervision of theatre men of long experience.

*Send for full details and estimates.*

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Denver, Colo.  
Detroit, Mich.

Los Angeles, Cal.  
Memphis, Tenn.  
Minneapolis, Minn.  
Miami, Fla.  
New Orleans, La.  
Omaha, Neb.  
Indianapolis, Ind.  
Kansas City, Mo.

Pittsburgh, Pa.  
Philadelphia, Pa.  
Salt Lake City, Utah  
San Francisco, Cal.  
Seattle, Wash.  
St. Louis, Mo.

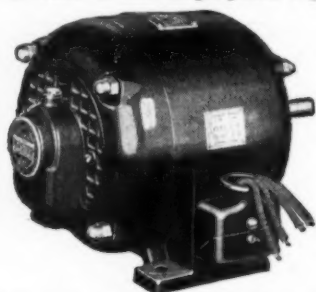


The Major F 2 R-100 Footlight. Lights entire stage floor yet is only 3" above floor.

# MAJOR FOOTLIGHTS

## Motor

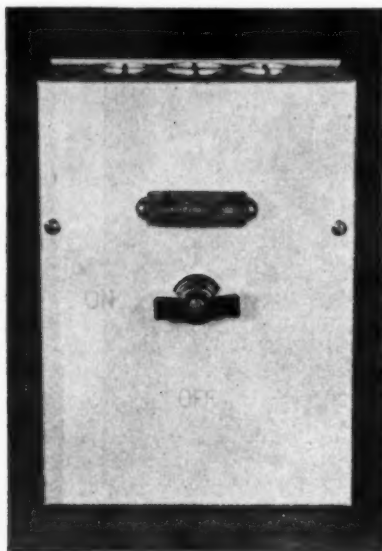
Master Electric Company, Linden and Master Avenues, Dayton, Ohio, has brought out a motor known as the "Super Wick" which is built in the single-phase repulsion-



induction type, 2 or 3-phase squirrel cage induction type and direct-current compound wound type. It comes in sizes from  $\frac{1}{8}$  to 1 h.p. The new motor is said to be a refinement of the "Dual Wick" type of motor manufactured by the same company. It has a larger oil and wick reservoir with sufficient oil capacity to operate one year without re-oiling, according to the manufacturer. The new motor also uses longer wicks with greater filtering and absorption capacity. Other refinements have been introduced, such as a reversing arm which makes it a simple matter to change the direction of rotation and a frame which more thoroughly encloses the motor.

## Range Switch

Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., has brought out a range switch designed for ranges not

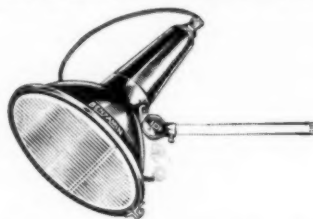


requiring over 40 amp., 250 volts, or 40 amp., 3-wire, 125 volts. The new switch is designed for surface and flush mounting and is operated by a handle in front. The surface switch is illustrated.

## Projector Light

Benjamin Electric Manufacturing Company, 120 South Sangamon Street, Chicago, has introduced a focusing type of floodlight designed for mounting close to vertical surfaces where lack of space necessitates placing the unit close to the surface to be illuminated. A heat-resisting glass lens gives a wide, flat beam of light, and the greatest

amount of light is directed at the point farthest from and at the smallest angle with the reflector, while less light is directed at the points nearest, according to the manufac-



turer. The difference in angles and distances causes all points to receive approximately the same amount of light. It is particularly adapted to use in furniture-finishing plants; department stores, for displaying tapestries, etc., and automobile body-painting establishments.

## Manufacturing Notes

Multi Electrical Manufacturing Company, manufacturer of porcelain bushings, cartridge fuse cutouts, wire lugs, switchboard parts, ground clamps and other products, has moved its headquarters and factory from 1848 West 14th Street, Chicago, to 210 North Ogden Avenue, that city, which is a more central location.

The W. R. Ostrander Company, Manufacturing Division, has been reorganized under the name of The W. R. Ostrander Electric Works, Inc., with offices at 911-913 Atlantic Avenue, Brooklyn. Iriah A. Terrell, factory manager for nearly 30 years, has been elected president, and Hugo Tollner, well known in the electrical industry, treasurer. The company is now occupying a three-story factory at the above address and will continue to manufacture the full line of "Diamond Ostrander" signaling devices that the "House of Ostrander" has developed since 1850. The prestige of the past 77 years, the officers of the company state, will be maintained and improved.

The Emerson Electric Manufacturing Company, with headquarters at St. Louis, Mo., has moved its Chicago office to 806 West Washington Boulevard, where larger facilities are available. Stocks of motors and fans will be maintained as heretofore at the Soo Terminal Warehouse, 519 West Roosevelt Road, that city.

Roller-Smith Company, 233 Broadway, New York City, has made the following additions to its sales representatives: William H. Neville, Age-Herald Building, Birmingham, Ala., will cover the state of Alabama, and Atkinson Equipment Company, Atlanta Trust Company Building, Atlanta, Ga., will cover the state of Georgia.

Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa., recently appointed J. P. Alexander its Boston manager in charge of all sales and service in New England. During the 20 years Mr. Alexander has been associated with the company he has been a prominent figure in the electrical industry in New England. He leaves the managership of the New Haven (Conn.) office, which he assumed in 1924, to take up his new duties. George H. Cox, whom he succeeds in New England, has been appointed sales manager at the South Philadelphia Westinghouse Works in charge of sales of all products manufactured at that plant.

H. C. Thomas has been appointed assistant general manager of the merchandising department of the Westinghouse Electric and Manufacturing Company. He was assistant to the manager of the department since 1922, when the department was created.

Edison Lamp Works, Harrison, N. J., has just issued, as parts of its lighting data series, bulletins on illumination terms and lighting for street traffic control. The former, 56 pages, contains a list and definitions of the terms used in illuminating engineering. The street traffic lighting book contains 28 pages devoted to the illumination of traffic signaling devices.

American Insulated Wire Corporation, Providence, R. I., was honored recently by a visit from Secretary of Labor Davis, who visited the plant to see how rubber cables are manufactured. The process from beginning



to end was followed by Mr. Davis with much interest. Shown in the photograph are, left to right, Ira S. Galkin, secretary; James J. McDermott, Jacob Kenner, president; Secretary Davis, John J. Brochu, B. Kenner, treasurer, and H. Kenner, vice president of the Atlantic company.

Safety Cable Company, 114 Liberty Street, New York City, announces the election of W. F. Field as president, to succeed the late LeRoy Clark. Mr. Field has been executive vice president of the company and a member of its executive committee.

The Paine Company, 2949 Carroll Avenue, Chicago, announces the removal of its New York City office from 33 Warren Street to 79 Barclay Street, where larger space is available.

Frank Adam Electric Company, St. Louis, Mo., has made arrangements with the Square D Company of Canada, Ltd., to handle Frank Adam products out of their sales offices in Toronto and Montreal and to assemble the products in its plant at Walkerville. Melvin J. Kiefer has been appointed district manager of the Frank Adam Company in its metropolitan New York territory, with headquarters at 182 North Eleventh Street, Brooklyn. Bert F. Fuller is to be in charge of the Stewart Works of the company at 425 Folsom Street, San Francisco.

The Board of Directors of the General Electric Company, at a meeting held recently at the Bloomfield (N. J.) plant, elected Clarence M. Wooley a member. Mr. Wooley is chairman of the board of the American Radiator Company. Charles W. Appleton of the company's law department was elected a vice president in charge of general relations with public utilities.